



## DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)

### Doctorate in Clinical Psychology: Main Research Portfolio

**1) A Systematic Review of the Modifications Required to Enhance the Efficacy of CBT in Reducing Mental Health Symptoms in Young People with Autistic Spectrum Disorders ;2) Evaluation of a Tailored Training Program to Improve the Assessment and Treatment of Trauma in an Early Intervention in Psychosis (EIP) Service; 3) A preliminary investigation of attachment style, inflated responsibility and excessive reassurance-seeking behaviours in adolescents with OCD.**

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# Research Portfolio Submitted in Part Fulfilment of the requirements for the Degree of Doctorate in Clinical Psychology

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Doctorate in Clinical Psychology

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August 2015

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## Abstracts

### **Critical Literature Review**

The present study sought to review effective Cognitive Behavioural Therapy (CBT) interventions for the treatment of common mental health disorders in young people with Autism Spectrum Disorders (ASDs) specifically identifying modifications to standardised interventions employed in the context of the NICE guidelines. Systematic searches of electronic databases, reference lists and journals identified 12 studies. Each identified study that met predetermined inclusion criteria was critically reviewed and summarised in terms of participants, intervention, measures, outcome variables and modifications to treatment. Overall, modified CBT yielded reductions in anxiety, OCD, and depression. Participants had average or above levels of intelligence and verbal skills and there was a distinct lack of gold standard research into the effects of CBT for disorders other than anxiety. Contrary to NICE guidelines, studies did indicate idiosyncratic adaptations tailored to the characteristics of each mental health disorder. CBT is an effective intervention for common comorbid mental health difficulties in young people with ASDs and can be delivered in individual or group format to yield good results. However, modifications consistently involve reducing the cognitive components of CBT, and preliminary evidence suggests manualised social skills interventions appear to be equally effective. Implications for clinical intervention and directions for future research are discussed.

**Key Words:** Autism Spectrum Disorders, Cognitive Behaviour Therapy (CBT), anxiety, OCD, Depression, Young people

### **Service Improvement Project**

The co-morbidity of psychosis and the experience of traumatic events is widely recognised in the literature and by NICE guidelines (CG178, 2014). This has resulted in the recommendation that in first episode psychosis, patients should be routinely assessed for trauma histories. However, research suggests that around two thirds of patients are not asked about trauma (Read et al, 2007), and guidance for treatment is limited. The aim of the current study was to improve adherence to evidence-based practice by identifying, and reducing, barriers to the assessment and treatment of complex trauma in EI patients.

**Methods:** The Plan Do Study Act (PDSA) model of service improvement was employed to guide the intervention. This included completing a focus group to identify staff needs and plan and develop a training program which was delivered to the staff team to meet these needs. A questionnaire was developed and administered pre, post intervention and at 6 month follow-up to assess change in staff knowledge, confidence and worries surrounding assessment and treatment of trauma. Progress and planning for future service development was also reviewed during the 6 month follow-up meeting. **Results:** The training package significantly improved staff members' confidence and knowledge in assessing and treating trauma and marginally reduced worries. Improvement was maintained after 6 months of implementing skills despite the team undergoing restructuring. **Discussion:** Working with staff to develop training which accurately meets their needs supports the development of an effective training package. Consideration of the relevance of this intervention for similar services and directions for future progression are discussed.

**Key Words:** Psychosis, Phase 1, Assessment, Treatment, Trauma, Abuse



### **Main Research Project**

Cognitive models of OCD identify inflated responsibility as a vulnerability and maintenance factor which is associated with compulsive behaviours including excessive reassurance seeking (ERS; Rachman, 2002; Salkovskis, 1985). An emerging body of evidence has also implicated attachment styles in OCD symptom severity as well as the core cognitive components that maintain it (Doron, Moulding, Kyrios, Nedeljkovic, & Mikulincer, 2009; Haciomeroglu & Karanci, 2014). However, these models have largely been evaluated with adult samples and, with regards to attachment and ERS specifically, it is unclear how this translates to understanding clinically significant OCD presentations in young people. The aim of the current study was to test for the prevalence and specificity of disorganised attachment representations, inflated responsibility and ERS in a sample of adolescents with OCD (n=19) compared with adolescents with other anxiety disorders (n=19) and healthy controls (n=19). Findings indicate that each of the variables are elevated among the clinical groups but there was little evidence of specificity between adolescents with OCD and other anxiety problems in terms of attachment, inflated responsibility or ERS. The outcomes are discussed in relation to findings from the adult literature and directions for future research and clinical practice are considered.

**Key words:** Obsessive-compulsive Disorder, inflated responsibility, excessive reassurance-seeking, attachment.

# **Critical Literature Review**

## **A Systematic Review of the Modifications Required to Enhance the Efficacy of CBT in Reducing Mental Health Symptoms in Young People with Autistic Spectrum Disorders**

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## **Introduction**

Prevalence rates of Autism Spectrum Disorders (ASDs) are reported to range from 0.6-1.0% of the child and adolescent population (Gillberg & Billstedt, 2000; Simonoff et al., 2008). There are an increasing number of people being diagnosed with ASDs in the UK, placing increased burden on mental health services (Langdon et al., 2013). This is compounded as research also indicates high prevalence rates of co-morbid mental health disorders among young people (YP) with ASDs. Mood and affective disorders occur at a greatly increased rate compared to rates among typically developing (TD) populations (Ozsivadjian & Knott, 2011; White, Oswald, Ollendick & Scahill, 2009). Co-morbidities can result in more frequent referrals into services (Matson & Nebel-Schwalm, 2007), resulting in around 1 in 10 individuals engaging with Child and Adolescent Mental Health Services (CAMHS) thought to have an ASD (Wistow & Barnes, 2009).

The impairment for YP, and burden on families and mental health services, has led to substantial interest in the identification of successful and cost-effective treatments for YP with ASDs and co-morbid mental health needs (e.g. Donoghue, Stallard, & Kucia, 2011; Kannabiran & McCarthy, 2009; Langdon et al., 2013; Reichow, Doehring, Ciccetti, & Volkmar, 2011).

CBT has been suggested for use with YP with ASDs due to its substantial evidence base for treating mood and affective disorders in TD YP (e.g. Cartwright-Hatton, Roberts, Chitsabesan, Fothergill, & Harrington, 2004; POTS, 2004; Reinecke, Ryan, & Dubois, 1998; Wethington et al., 2008). However, core features of the condition, namely limited or impaired verbal communication, concrete thinking, poor emotional literacy and social communication deficits (Baron-Cohen, Leslie, & Frith, 1985; Leyfer et al., 2006; Minshew, Goldstein, & Siegel, 1997; Ozonoff, Pennington, & Rodgers, 1991; Simonoff et al., 2008) are thought to inhibit the efficacy of standard treatment (Lickel, Maclean, Blakeley-Smith, & Hepburn, 2012). This has led to debate about whether CBT is appropriate for this population (Chalfant, Rapee, & Carroll, 2007; Lickel et al., 2012).

A wealth of systematic and narrative reviews have emerged in an attempt to collate findings of the multitude of empirical studies exploring treatment options for young people with ASDs to resolve this debate (e.g. Donoghue, et al., 2011; Lang, Regester, Lauderdale, Ashbaugh & Haring, 2010; Reaven, 2009; Rotheram-Fuller & MacMullen, 2011; Scattone & Mong, 2013; White et al., 2009). The majority of these reviews summarise the outcomes of empirical studies exploring the use of CBT with young people with ASDs and comorbid anxiety disorders. With the exception of Lang et al., (2010), these reviews follow more of a narrative approach and lack a systematic review of the literature. They report on a

combination of study design often without comparator cases and review between four and nine studies. Conclusions are largely favourable of CBT for reducing anxiety symptoms with this population despite lacking a clear critique of the quality of study design. Three of the six reviews identify modifications to CBT in order to enhance efficacy for young people with ASDs (Donoghue et al, 2011; Reaven, 2009; Rotheram-Fuller & MacMullen, 2011). However, each of these reviews employ a narrative approach suggesting that the modifications described have not been systematically applied to clinically effective interventions.

Despite this, such studies have informed the guidance recently published by the National Institute for health and Care Excellence (NICE) to inform clinical management and support of children and YP on the autism spectrum (Baird et al., 2013; Guideline Development Group). This document recommends a number of modifications when using CBT for anxiety in YP with ASDs:

- emotion recognition training
  - greater use of written and visual information and structured worksheets
  - a more cognitively concrete and structured approach
  - simplified cognitive activities, for example, multiple-choice worksheets
  - involving a parent or carer to support the implementation of the intervention, for example, involving them in therapy sessions
  - maintaining attention by offering regular breaks
  - incorporating the child or young person's special interests into therapy if possible.
- (p. 22; CG170, 2013).

It also recommends the use of group intervention where possible except if YP cannot engage in groups. Such modifications are largely focused on the structure or delivery as opposed to the content of interventions and point to the need to reduce or simplify cognitive components. Furthermore, the guideline highlights a series of other mood and affective disorders that are common in YP with ASDs and comprise the majority of co-morbid referrals to CAMHS (Depression, OCD & BDD, PTSD). However, the guideline does not indicate any unique modifications for these disorders but recommends referring to the treatment guidelines for such disorders in TD children.

It is predicted that the lack of guidance reflects the limited or weak published evidence (Wood, Fuji, & Renno, 2011). While YP with ASDs 'may be candidates for talk-based therapies similar to those employed with children and adults with mental health disorders' (p.197; Wood et al., 2011), this has yet to be consistently empirically confirmed.

It is important to ensure that clear and comprehensive guidelines pertaining to the delivery of effective interventions are available to support consistency in the administration of successful treatment for the broad spectrum of comorbid mental health disorders in YP with ASDs (Wood et al., 2011). Specifically, there has been a call to ‘determine the core ingredients of effective treatment , how traditional CBT strategies may need to be modified for children with ASD, and how treatment should be delivered’ (p. 18, White et al, 2009).

This paper seeks to respond to this call and provide a comprehensive review of published original studies using CBT to treat mood and affective disorders in YP with ASDs. It seeks to build on existing systematic reviews (e.g. Lang, Regester, Lauderdale, Kristen, & Haring, 2010; Scattone & Mong, 2013; Vasa et al, 2014; White et al, 2009; Wood et al., 2011) by critically appraising the quality, efficacy and nature of modifications to CBT reported in the treatment of anxiety as well as OCD and depression, in YP with ASDs. Crucially, this review aims to adopt a systematic search *and* review of the literature in order to draw robust conclusions about how CBT should be modified to effectively reduce symptoms of co-morbid mental health disorders in young people with ASDs. The specific research questions being asked of this literature include

- 1) How many published studies report a significant effect of a CBT intervention, for young people with ASDs and anxiety, OCD or depression?
- 2) Are these interventions using the modifications recommended by NICE?
- 3) Are additional adaptations being employed that have implications for practice?

The objective of considering these questions is to provide a comprehensive document which can be used to supplement NICE CG170 recommendations and inform clinical practice with a typically hard-to reach, treatment resistant, but in-need population (Langdon et al., 2013; Wood et al., 2011).

## **Method**

A systematic review was conducted following recommendations and components identified by Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA; Liberati et al., 2009) to improve the rigor of data extraction and reporting.

*Protocol:* Methods of review and inclusion criteria were specified in a research proposal that was reviewed for feasibility, prior to beginning the search, by the second and third authors.

Eligibility Criteria: *Inclusion criteria:* To be included, studies needed to report original data of an intervention employing a CBT approach for YP with an ASD and mental health disorder. Inclusion criteria followed the the PICOS approach recommended in PRISMA (Liberati et al., 2009) to identify Participants, Interventions, Comparators, Outcomes and Study design of interest.

*Types of participants:* Children and YP (Aged 18 and below) with a diagnosis of ASD (autism, Asperger's or PDD-NOS). This had to be confirmed within the study design section via a report of the outcome of a standardised assessment tool, such as the ADOS. YP also had to have achieved scores within the clinically significant range of standardised measures for a coexisting mental health disorder including anxiety, OCD or depression.

*Intervention:* Studies were only included if they reported using a CBT intervention to target mental ill health symptoms. The method sections were screened to ensure that studies had either employed a manualised CBT intervention or reported cognitive and behavioural components such as cognitive restructuring and exposure, described by Velting, Setzer & Albano (2004) as necessary to comprise a CBT intervention. Absence of reported modifications was not an exclusion criteria as efficacy of non-modified CBT for this population would have been of equal interest. However, all eligible studies reported some degree of modification.

Studies reporting on interventions for OCD were reviewed separately to studies employing an intervention for anxiety despite the fact that many anxiety studies included participants with a diagnosis of OCD. The anxiety studies did not report on the efficacy of the intervention by diagnosis and treatment protocols have been developed for treating OCD in children that are distinct from anxiety treatments (e.g. March & Mulle, 1998). It was considered clinically relevant to review the effects of these interventions separately.

*Comparator:* The treatment group had to be compared to a control population, who either received an alternative intervention or were waitlisted for the duration of the study. Single case design studies and studies which didn't have a comparator group were excluded as this study is interested in effective interventions and it is difficult to infer efficacy of a specific intervention with no comparison group.

*Outcome:* The primary outcome of interest for the current study was the modifications applied to the intervention. However, only studies reporting a significant effect of intervention were included in the present study in order to evaluate the modifications applied to interventions yielding significant reduction in symptoms. For the purpose of this review 'efficacy' was defined as a statistically significant reduction in

target mental health symptoms between pre and post treatment. Consideration was also given to studies with an intervention and comparator group which reported a clinically meaningful change in symptoms to below the clinical cut off of a scale or to no longer meet criteria for diagnosis.

*Study Design:* Randomised control trials (RCTs) and case-control studies were included provided the above criteria were met. Studies had to include measures of mental health symptoms and symptoms must have been measured at pre and post-intervention as a minimum.

*Exclusion Criteria:* Non-English language studies were excluded due to lack of resources for translation. The decision was also made to exclude all grey material for two main reasons; there is a risk of bias through including literature which has not successfully passed peer review where methodology has the potential to be less rigorous. Furthermore, in order to address the question posed by this review it was necessary to consider studies with significant effects and studies which do not yield clinically significant effects typically do not achieve publication (Hopewell, Clarke, Stewart, & Tierney, 2007).

*Information Sources and Search Terms:* Systematic searches of four electronic databases were included; PubMed, Scopus, PsychINFO and WEB of SCIENCE. Publication year was not limited. Reference lists of most-cited articles and recent review papers were searched by hand, as were databases of the journals most frequently used (Journal of Autism and Developmental Disorders, Journal of Child Psychology and Psychiatry).

The following terms were used: ‘CBT’ or ‘Cognitive Behaviour Therapy’, ‘Autism’, ‘YP’ (also children and adolescents separately) and ‘[mental health disorder] (anxiety, depression, OCD, BDD, PTSD; *no papers were found for the BDD search in any search engines and only one case study was found for PTSD so these disorders are not referred to within results*). Searches were initially expanded to include specific mental health disorders and YP. This was followed by a simplified search including just ‘CBT’ and ‘Autism’ ((CBT[Title/Abstract] AND autism[Title/Abstract]) (PubMed example) which returned all studies identified in the more complex search plus additional relevant studies. Overall search results are reported in the Prisma flow diagram (see Figure 1).

*Study Selection and Data Extraction Process:* The first author completed the searches and reviewed the title and abstract of all returned results to confirm whether studies met eligibility criteria. Of those studies which met eligibility criteria, the first author completed data extraction on all data items of interest for the research question

including participants, intervention characteristics, study design and measures, efficacy of intervention at reducing mental health symptoms (pre and post measures, statistical significance and report of change index or results in relation to clinical cut-off) and modifications to interventions. The second and third authors reviewed the data extraction table to confirm study inclusion and although frequent consultation was had between authors on study selection and data extraction, the second and third authors did not complete independent inter-ratings of these stages.

*Risk of Bias:* To assess quality, or risk of bias, within individual studies, the Newcastle Ottawa Scale of assessment (NOS; Wells, Shea, O'Connell, Peterson, Welch, Losos, Tugwell, 2014) was employed. This measure is recommended within the Cochrane handbook to assess the quality of non-randomised studies. Although many included studies did employ a RCT design it was considered important to maintain consistency of assessment across studies for ease of interpretation. The Cochrane tool for assessing RCTs has been reported to be more applicable to clinical trials than psychological interventions (Uman, 2011). Use of the NOS permitted for assessment of risk of bias within studies in the areas of participant selection (score range 0-4), comparability of treatment to control group (score of 0-2) and measure of exposure (impact) of treatment (score 0-3). Overall scores were categorised into high (1-3), moderate (4-6) and low (7-9) risk of bias. An additional scale was developed for the purpose of this review to assess the content of CBT within the modified intervention. This scale followed the structure of the scales detailed in the NOS and was designed to measure adherence to the 6 components of CBT identified by Velting, et al., (2004) including psychoeducation, somatic management, cognitive restructuring, problem solving, exposure and relapse prevention. A score was awarded for full adherence to the original model or clearly defined cognitive and behavioural components (score 0-1).

**Treatment content scale** (score awarded for presence of either of the starred items)

- Evidences inclusion of all 6 components of CBT \*
- Clear evidence of core cognitive components *and* behavioural components (e.g. cognitive restructuring and exposure) \*
- Cognitive components only
- Reduced cognitive components more behavioural intervention
- No evidence of cognitive components

For the current review there was risk of publication bias across studies as a result of the decision to exclude grey and non-English material. This study attempted to reduce bias as much as practically possible through the structured selection and appraisal method

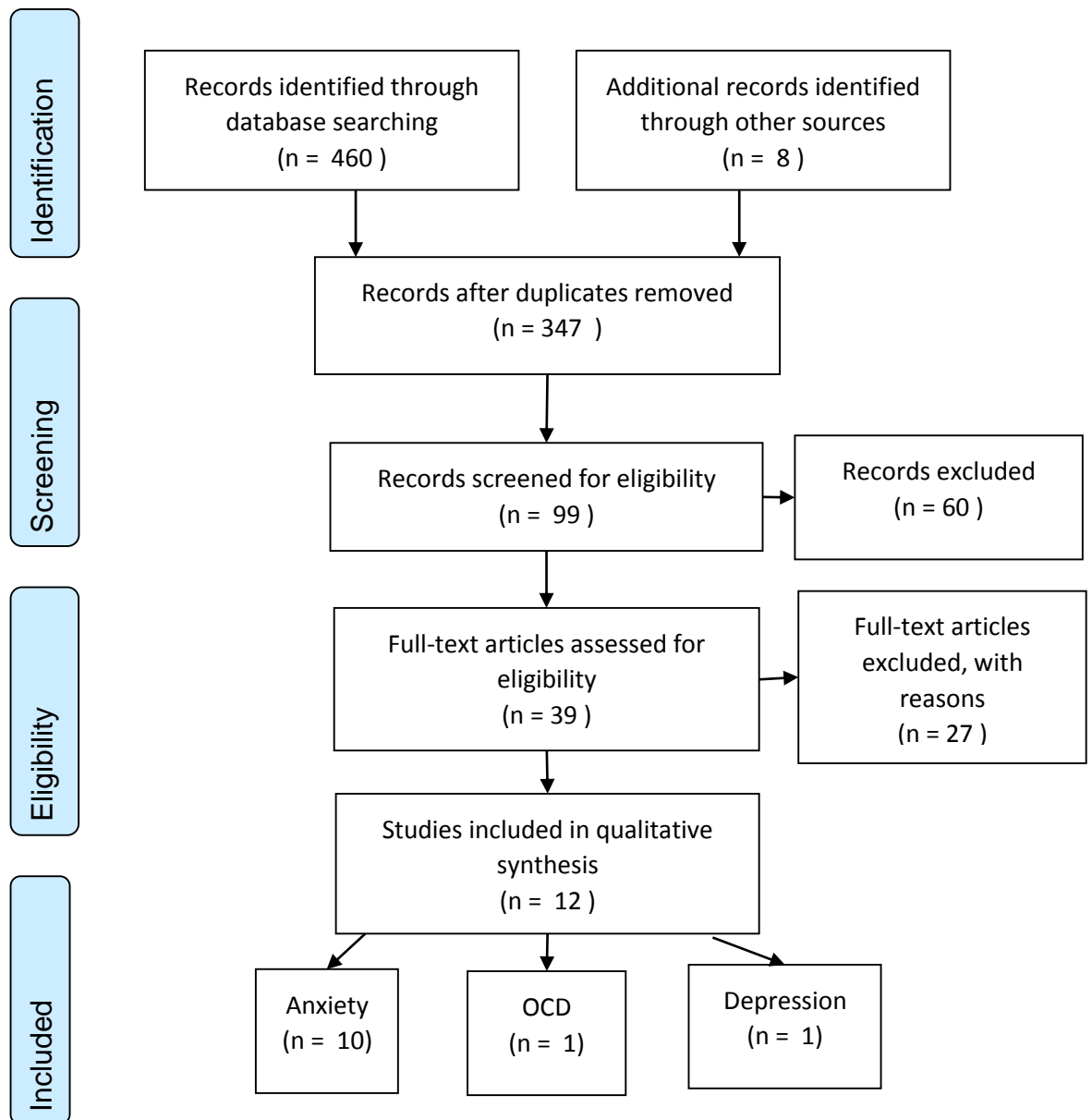


reported above and through close monitoring of each stage from the second author. However, it is acknowledged that risk of publication bias remains a factor.

## **Results**

*Study Selection:* Titles and abstracts of the 468 studies initially identified were scanned for eligibility, based on the above mentioned criteria. Non-eligible studies and duplicate titles were removed. This resulted in 39 full text articles being considered for review. Data was extracted from each study and was summarised in terms of a) participant characteristics, b) quality of study design and measures according to the NOS scale, c) efficacy of intervention at reducing mental health symptoms and d) modifications to interventions including the extent to which cognitive components of intervention were retained. At this stage a further 27 studies were excluded from the final review of data. Eight of which were removed due to comprising of reviews of secondary data (Boyd, McDonough, & Bodfish, 2012; King & Desaulnier, 2011; Lang et al., 2010; Langdon et al., 2013; Reaven, 2009, 2011; Rotheram-Fuller & MacMullen, 2011; Scattone & Mong, 2013), one (Sze & Wood, 2008) was a duplicate that had not been previously filtered out and one (White et al, 2013) reported a non-significant effect of the intervention on anxiety. Five studies were excluded as they reported the effects of CBT for core features of ASD rather than mental health symptoms (Drahota, Wood, Sze & Van Dyke, 2011; Kenworthy et al, 2014; Scarpa & Reyes, 2011; Wood et al, 2009; Wood, Fujii, Renno & Van Dyke, 2014) and 12 included (n=1) designs (Cook, Kieffer, Charak, & Leventhal, 1993; Lehmkuhl, Storch, Bodfish, & Geffken, 2008; Nadeau, Arnold, Storch, & Lewin, 2014; Reaven & Hepburn, 2003; Schleismann & Gillis, 2011; Sze & Wood, 2007, 2008) or did not have a comparator group (Reaven, Blakeley-Smith, Leuthe, Moody, & Hepburn, 2012b; Ooi et al., 2008; Ozsivadjian & Knott, 2011; White et al., 2010; White, Ollendick, Scahill, Oswald, & Albano, 2009).

Figure 1: Prisma Flow Diagram of Inclusion



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

## Outcome of interventions

### *Anxiety Disorders*

The current study reviewed 10 studies which met eligibility criteria to answer the primary research questions. Results follow subheadings from the NOS scale to summarise study characteristics and expand upon scores detailed in Table 4 (see Appendix 1a) relating to risk of bias in interpretation of findings.

*Participants:* Collectively studies recruited 423 YP with an ASD and an anxiety disorder to complete group or individual CBT-based interventions. Sample sizes ranged from 12 to 71 including Controlled Trials and Randomised Controlled Trials (RCT; Chalfant et al., 2007; Fuji et al., 2013; McNally Keehn, Lincoln, Brown, & Chavira, 2013; Reaven, Blakeley-Smith, Culhane-Shelburne, & Hepburn, 2012a; Reaven et al., 2009; Sofronoff, Attwood, & Hinton, 2005; Storch et al., 2013; Sung et al., 2011; Wood et al., 2009a; Wood et al., 2015).

The majority of participants were male (n= 353; 83.5%, 70 females); which roughly equates to the ratio of males to females thought to receive the diagnosis of an ASD (4:1; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001). Ages ranged from 7-16 with most studies focussing on late childhood, and only one study recruiting adolescents (Wood et al, 2015). All participants were high functioning with average or above IQ and verbal functioning. Most participants had a diagnosis of High Functioning Autism (HFA; 47.7%) or Asperger's (28.4%) and remaining participants were described as having Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS; 10.2%) or jointly categorised as Autism with PDD-NOS (13.7%). The whole spectrum of anxiety disorders were identified and treated including Social Phobia, Separation Anxiety, Specific Phobias, Generalised Anxiety Disorder, Panic Disorder, Agoraphobia and OCD.

#### *Participant Selection and Comparability to Controls*

The majority of studies included strong participant selection methods with eight of the studies achieving a score of 3-4/4. The two remaining studies (McNally Keehn et al., 2013; Sofronoff et al., 2004) scored 2/4 due to potential selection bias limiting the representativeness of their samples. Sofronoff et al. (2005) recruited through community based adverts only introducing bias through the characteristics of participants who self-refer to studies. McNally Keehn et al. (2013) reported recruiting through local agencies and non-profit organisations but failed to elaborate further, limiting understanding of the applicability of such agencies and inhibiting replicability. Studies were typically poor on defining whether the anxiety disorder was a recent onset or historical difficulty across groups with only 50% indicating that participants were accepted if they were medicated providing medication was stable (Fuji et al., 2013; Reaven et al., 2009; Storch et al., 2013; Sung et al., 2011; Wood et al., 2009). However, strengths of the study design across all studies lay in the validation of case definition. All studies confirmed an existing diagnosis of an ASD with a standardised measure such as the Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore & Risi, 1989) and most confirmed the diagnosis

of anxiety with an interview such as the Anxiety Disorders Schedule for children/parents (ADIS C/P; Albano & Silverman, 1996), although one, (Sung et al., 2011), relied on the child Spence Children's Anxiety Scale (SCAS; Nuata et al., 1998). All studies also included a strong method of selecting controls as samples were recruited and then allocated to treatment or comparator condition. However, only 50% of these studies actively assessed comparability of participants to controls either through matching based on demographics in the study design or controlling for baseline anxiety in the analysis (Fuji et al., 2013; McNally Keehn et al., 2013; Sofronoff et al., 2005; Wood et al., 2009; Wood et al., 2015).

*Intervention Characteristics:* The duration of interventions ranged from 6-32 sessions (modal number 16 sessions) lasting between 50 and 120 minutes (modal time 90 minutes). Four Studies included group-based interventions (Chalfant et al., 2007; Reaven et al., 2012a; Sofronoff et al., 2005; Sung et al., 2011), one group plus individual components (Reaven et al., 2009) and the remaining five studies employed an individual therapy approach. Studies employed a variety of designs including intervention compared to waitlist (n=5), intervention compared to treatment as usual (TAU; n=3), child compared to child plus parent compared to waitlist (n=1) and CBT intervention compared to a social program (n=1).

Five studies modified CBT programs designed for TD YP including Building Confidence (Wood & McLeod, 2008) Coping Cat (Kendall, 1992), Cool Kids (Lyneham, Abbott, Wignall, & Rapee, 2003) and Exploring Feelings (Attwood, 2004). Three studies employed manuals specifically developed for YP with autism (Facing your Fears; Reaven et al., 2009; Reaven et al., 2012a) or an unstandardized program (Sofronoff et al., 2005); two studies (Storch et al., 2013; Wood et al., 2015) employed Behavioural Interventions for Anxiety in Children with Autism (BIACA; Wood & Drahota, 2005).

*CBT component:* All studies demonstrated the use of three to six core components of CBT. Typically across studies this included psychoeducation about emotions, problem solving skills and exposure to feared outcomes. Most studies reported a reduced cognitive component, employing a greater proportion of exposure and relaxation strategies. The majority of psychoeducation centred on affect recognition and somatic management largely involved relaxation activities delivered in a more directive way than would be expected for CBT with a TD population. Cognitive restructuring was typically delivered in a creative way through the use of acronyms such as KICK- Knowing I'm nervous, Icky thoughts, Calming thoughts, Keep practicing (Wood et al., 2015) through guided discovery

pretending to be scientists (Sofronoff et al., 2005) or through the use of lists of unhelpful and helpful thoughts from which alternative thinking strategies could be chosen rather than generated. Similarly, problem solving was introduced through acronyms such as STAR-Stop, Think, Act, Reflect (Sung et al., 2011) or social stories and most exposure was completed as home practices. With the exception of two studies (Chalfant et al., 2007; Sofronoff et al., 2005) relapse prevention plans were neglected within these interventions.

It is of interest to note that those studies employing between five and six components of CBT (Chalfant et al., 2007; McNally Keehn et al., 2013; Sofronoff et al., 2005; Sung et al., 2011; Wood et al., 2015) were the only studies to report significant child reported reductions in anxiety or increased use of coping strategies.

*Ascertainment of Exposure (Outcome Measures):* A variety of measures were used across the studies to assess change in anxiety symptoms. All studies relied on standardised measures validated in a TD population, rather than with samples of YP with ASDs. Most commonly used measures included an interview, ADIS C/P, and a parent and child self-report questionnaire, SCAS. Sofronoff et al. (2005) also employed an idiosyncratic measure to assess change in the ability to generate strategies to manage anxiety which was developed specifically for YP with ASDs. All studies employed the same measures across control and treatment groups demonstrating a strength of ascertainment of impact.

Over half of the studies employed a multi-informant and mix of questionnaire/rating scale and interview design reporting on parent and/or child report as well as clinician observation ratings (Chalfant et al., 2007; McNally Keehn et al., 2013; Storch et al., 2013; Sung et al., 2011; Wood et al., 2009; Wood et al., 2015). Six studies also demonstrated strong study design, reducing bias by including independent evaluators blind to treatment condition to complete measures of anxiety (Fuji et al., 2013; McNally Keehn et al., 2013; Reaven et al., 2012a; Storch et al., 2013; Wood et al., 2009; Wood et al., 2015). Bias was introduced to studies through variation in reports of non-response rates including no drop-out in either group (McNally Keehn et al., 2013; Sofronoff et al., 2005) equal rates (Sung et al., 2011; Wood et al., 2009; Wood et al., 2015) or different rates across groups (Fuji et al., 2013; Storch et al., 2013) and drop-out not being reported for the control group (Chalfant et al., 2007; Reaven et al., 2009; Reaven et al., 2012).

*Outcomes and Overall Risk of Bias:* As a requirement of the review, all studies reported a positive effect of intervention at reducing anxiety on at least one measure. One study demonstrated a significant effect of the intervention but this was not significantly different to the control intervention (Social Recreation Program; Sung et al., 2011). With

the exception of three studies (Chalfant et al., 2007; Fuji et al., 2013; Reaven et al., 2009) all reported pre and post-treatment effects with at least one follow-up measure indicating that gains had been maintained post-treatment.

Four studies found child reported reductions in anxiety (Chalfant et al., 2007; McNally Keehn et al., 2013; Sung et al., 2011; Wood et al., 2015) one study found child reported reduction in anxious arousal (Storch et al., 2013) and one reported that children demonstrated an increased use of strategies to cope with anxiety (Sofronoff et al., 2005). All 10 studies reported a parent and/or clinician rated reduction in anxiety, however, as mentioned above only 6 of these studies employed a clinician who was blind to treatment condition and all parents were involved in the treatment process, with the exception of McNally Keehn et al. (2013) introducing possible bias through investment in outcome. For those studies reporting effect sizes, all achieved large effects apart from Sung et al. (2011) who reported less than small effect sizes (.06) for between group differences in child-reported anxiety over time. This is consistent with the lack of significant difference found between the CBT and SR interventions.

The successful studies included a mix of individual (Fuji et al., 2013; McNally Keehn et al., 2013; Storch et al., 2013; Wood et al., 2009; Wood et al., 2015) and group-based study designs (Chalfant et al., 2007; Reaven et al., 2009; Reaven et al., 2012a; Sofronoff et al., 2005; Sung et al., 2011). The majority of studies achieved scores of between 4 and 6 on the NOS indicating a moderate risk of bias. Four studies achieved a score of 7 or 8 indicating low risk of bias (Fuji et al., 2013; McNally Keehn et al., 2013; Wood et al., 2009; Wood et al., 2015) but no study achieved a full score on this scale. Typical areas of weakness across studies included a lack of reported history of symptoms across the treatment and control group, a lack of independent evaluators of outcome blind to treatment condition and recruitment that either relied on community based self-referrals or was taken from a narrow pool such as a single university-based clinic. Each of these factors introduce the potential for bias within the sample or interpretation of effect.

*Modifications:* Only two studies employed all seven of the NICE recommended modifications (Reaven et al., 2009; Reaven et al., 2012a) and these interventions relied on a tailor made manual rather than a modified version of an existing manual. All studies employed the recommendations pertaining to using visual aids and providing emotion recognition, as recommended by NICE and all apart from one study (McNally Keehn et al., 2013) involved parents, either as co-therapists in session or in a separate parent component. However, there was also a wide range of additional modifications employed

across the studies which largely related to the content of material delivered and specific therapeutic techniques employed. Individual modifications appear within Appendix 1a but are summarised in Table 1. It is important to note that many interventions for anxiety focus on improving social skills (e.g. Storch et al, 2013; White et al., 2013; Wood et al, 2009; Wood et al, 2015) but none of these studies report an improvement in child-reported anxiety and White et al. (2013) found no effect of the MASSI program which specifically targets social skills and anxiety. As such, although this is a modification it is not one that appears to be recommended for use in isolation.

*Table 1:* Summary of recommended modifications to the content and delivery of interventions for anxiety.

<b>Recommended Adaptations to CBT for Anxiety Disorders</b>
<ul style="list-style-type: none"> <li>• Longer duration of sessions to allow more time to match children's pace and repeat content to aid learning</li> <li>• Use of metaphors e.g. child as scientist to encourage guided discovery</li> <li>• Use of acronyms e.g. STAR and KICK to introduce problems solving and cognitive restructuring</li> <li>• Use of social stories for cognitive restructuring and problem solving (e.g. antidote to noxious thoughts; Sofronoff et al., 2005)</li> <li>• Use of idiosyncratic rating scales such as James and the Maths test and a feelings thermometer to concretely measure change instead of asking about feelings directly</li> <li>• Incorporate a Relaxation strategy section into the program to support affect management concretely</li> <li>• Tangible reinforcement program in session which can be translated to home and school such as a token reinforcement program</li> <li>• Use of video modelling and role play to teach coping strategies</li> <li>• Increased use of games to convey concepts and maintain interest for younger children</li> <li>• Employ an additional parenting component to teach parents about the role of over-protective parenting in anxiety disorders and strategies to support their child and manage their own feelings of anxiety</li> <li>• Link with schools to increased school-based support and generalisation of concepts.</li> </ul>

### *Obsessive-Compulsive Disorder*

One study was identified which met the eligibility criteria for the current study. Russell and colleagues (2013) recruited 46 14-65 year old participants from a range of clinical settings including ASD clinics, adult and paediatric OCD clinics and CAMH services generating a clinically representative sample. All participants had a verbal IQ of >70 but specific ASD diagnosis was not described. ASD diagnosis was independently validated using the ADI-R and ADOS and the presence of OCD was verified with the Yale Brown Obsessive Compulsive Scale (YBOCS). Participants were recruited and randomly allocated to the CBT or Anxiety Management (AM) treatment group indicating an appropriate selection of clinic-based controls. History of OCD was established in both

groups and baseline symptom severity was controlled for in the analysis reducing risk of bias to detect effects.

The intervention included up to 20 one hour sessions although there was great variation in this with treatment completers being defined as attending a minimum of seven sessions. This involved 1:1 contact with a therapist and the CBT intervention was based on a treatment manual designed specifically for clients with ASD. It included 4 components of CBT including psychoeducation about anxiety and the cognitive cycle, problem solving or cognitive restructuring and a large focus on exposure and response prevention (ERP). The intervention was compared with an AM intervention providing psychoeducation about anxiety and relaxation strategies.

The Y-BOCS was administered to participants in the CBT and AM groups by independent evaluators blind to treatment condition at pre, post and follow-up sessions. Drop-out rate was comparable across groups (two from CBT and three from AM) reducing risk of bias in ascertainment of efficacy. Findings indicated a significant reduction in OCD symptoms and a greater number of treatment responders in the CBT compared to AM group but differences were not significant between groups. Effect sizes were small which is again consistent with the lack of significant difference between groups. However, this study design achieved an overall NOS score of 8 indicating low risk of bias, implying that findings of a lack of significance of CBT over anxiety management for OCD in this population should be considered a reliable finding.

*Modifications:* This study included five of the NICE recommended guidelines missing only the inclusion of parents, which would not have been appropriate given the broad range of ages of participants, and there was no report of offering regular breaks. Additional modifications employed are disorder specific confirming the need to differentiate from anxiety treatment.

*Table 2:* Table of additional modifications made to the treatment of OCD in an ASD population

<b>Recommended Adaptations to CBT for OCD</b>
<ul style="list-style-type: none"><li>• Up to 20 sessions to allow for a longer assessment period to differentiate compulsions from rituals and access for meanings attributed to intrusive thoughts</li><li>• Standard treatment approach for OCD employed intervention predominantly focused on ERP using a graded hierarchy and home practices</li></ul>



## *Depression*

Only one study was identified which met the eligibility criteria for the current study for treating depression in YP with ASD. McGillivray and Evert (2014) recruited 32 participants from a community sample, aged between 15 and 25 years of age. The sample included 23 males and 9 females with 23 participants diagnosed with Asperger's Syndrome and 9 diagnosed with HFA. All participants had a verbal IQ of >70. Participants were recruited through community-based advertisements. ASD diagnosis was confirmed with a telephone interview only and the presence of depression was determined through a self-report questionnaire (Depression Anxiety Stress Scales) indicating poor representativeness and validation of case definition. Participants were recruited and randomly allocated to the CBT or Wait List generating an appropriate selection of clinic-based controls and history of depression was assessed and reported in both groups. There were no significant differences between groups on demographics but comparability of cases and controls was not ensured through matching variables in design or controlling for differences/ base-line symptoms in analysis.

This intervention was developed specifically for people with depression and an ASD, based on the literature reporting that social difficulties associated with ASD can lead to negative views of self and relationships with others. The study was a controlled trial with an intervention compared to waitlist group. The intervention was developed as a brief manualised program named Think Well, Feel Well and Be Well, and comprised of 9 2-hour group sessions. It included four components of CBT including psychoeducation, somatic management, problem solving and a large focus on cognitive restructuring. No exposure was reported and it contained very minimal behavioural components. Drop-outs from either group were not described.

Participants completed the DASS and the Automatic Thoughts Questionnaire introducing potential for bias due to personal investment in the therapy but participants from both groups completed these measures reducing risk of bias in ascertainment of efficacy. There was no effect of intervention for whole group comparison but CBT significantly reduced depression symptoms for those initially scoring above the clinical cut-off, compared to wait list. There was no significant effect of intervention on negative automatic thoughts compared to waitlist, despite the substantial cognitive component. Effect sizes were small but 60% in the CBT group were reported to make substantial improvements compared to 20% in the WL and gains were maintained at nine month follow-up.

This study design was relatively flawed in terms of areas of potential bias and achieved an overall NOS score of three indicating high risk. As such, significant findings should be interpreted with caution and replication studies are needed.

*Modifications:* This study included only one of the NICE recommended guidelines; emotional recognition training. As with the OCD intervention, some recommendations would not be applicable, such as including parents due to the age of the sample. This study did employ a range of additional modifications which are disorder specific again confirming the need to differentiate from anxiety treatment.

*Table 3:* Table of specific modifications to treat depression in YP with ASDs

<b>Recommended Adaptations to CBT for Depression</b>
<ul style="list-style-type: none"> <li>• Shorter program (9 weeks)</li> <li>• Strong emphasis on challenging negative thoughts</li> <li>• Introduction of thought records</li> <li>• Mindfulness rather than relaxation</li> <li>• Less of a behavioural emphasis consistent with cognitive not behavioural activation intervention</li> <li>• Strategies to manage the ‘internal critic’ through thought catching and replacing</li> <li>• Teaching links between behaviour and mood</li> <li>• Improving social resources</li> </ul>

## Discussion

This review included 12 studies exploring the impact of CBT v WL, TAU or less structured intervention programs, involving 501 YP with ASDs and a co-morbid mental health difficulty. In order to meet eligibility, studies had to report a significant effect of the intervention on mental health symptoms and meet rigorous design criteria. Studies recruited a mix of clinic and community-based samples, used group and 1:1 format, based on modified manuals or manuals developed for young people with ASD containing most, if not all, components required for CBT. Typically a multi-informant measure of outcome was reported and results indicated a significant reduction in mental health symptoms as a result of the intervention on at least one outcome measure. With the exception of McGillivray and Evert’s (2014) study, all interventions achieved moderate to low risk of bias indicating a high quality of study design and implying that conclusions can be drawn with relative confidence.

Largely consistent with the NICE guidelines (NICE CG170, 2013), the evidence suggests that CBT, with specific adaptations, can be an effective intervention for YP with ASDs and comorbid mental health difficulties including anxiety, OCD, and possibly

depression. The limited evidence comparing CBT to an active intervention has not shown CBT to be superior for reducing symptoms of anxiety (Sung et al., 2011), or OCD (Russell et al., 2013). However, CBT yields significant clinical improvements in this population, can be delivered in a group or 1:1 format with equal success in a relatively time-limited intervention. Furthermore, studies employing CBT interventions to target the core features of ASD which may increase vulnerability to develop mental ill health have been equally successful (e.g. impaired social skills (Wood et al., 2009b), emotion regulation (Scarpa & Reyes, 2011), reduced independence of daily living (Drahota, Wood, Sze, & Van Dyke, 2011) and executive dysfunction (Kenworthy et al., 2014). This suggests that among this population modified CBT may reduce immediate emotional distress and act to enhance resilience against developing future mood or affective disorders. More research is needed but modified 'cognitive methods appear to be a feasible treatment option when applied to the mental health needs of such young people' (p. 98, Donoghue et al, 2011).

In consideration of the primary research questions, among these studies the extent to which modifications recommended by NICE are employed varied greatly from one (McGillivray & Evert, 2014) to all seven (Reaven et al, 2009; Reaven et al., 2012a). The adaptations identified follow recommendations for enhancing accessibility of CBT for YP with ASD by making sessions more concrete, practical and creative with a general emphasis on affect recognition, increased exposure opportunities and parental involvement (e.g. Donoghue et al, 2011; Rotheram-Fuller & MacMullen, 2011; White et al, 2009). However, the broad variation across studies may suggest that just employing basic modifications to delivery is not sufficient to meet the needs of YP with ASDs.

The findings of the current review imply that the NICE guidelines may be a useful template from which to begin adapting interventions but additional modifications are also being routinely employed within research trials to meet neurodevelopmental needs and successfully treat the symptoms of co-morbid mental health disorders. Additional modifications identified within studies include add on components for parents, rather than just involving them in the child intervention, and specific creative techniques such as social stories, acronyms and roleplays which target core features of ASD, such as literal understanding and poor theory of mind, making the therapy more concrete and relevant in nature (Kenworthy et al., 2014; Rotheram-Fuller & MacMullen, 2011; Wood, Fuji, Renno, & Van Dyke, 2014). The successful results reported in the studies reviewed are highly promising but caution must be taken when attributing successes to the modifications specifically. To date there are no published studies comparing modified CBT to standard CBT interventions for this population so it is possible that the active component yielding

positive results is the CBT rather than the modifications. The fact that the social recreation (Sung et al, 2011) and anxiety management (Russell et al, 2013) control programs, which are highly modified to meet the social, sensory and communication needs of this population, were as effective as the CBT suggests that such modifications may be important to enhance accessibility but further research is needed to confirm this.

Despite the dearth of literature exploring interventions for disorders other than anxiety, there is a trend to suggest that modifications to CBT should be disorder specific, as they would be for a TD population. Research would seem to suggest that the underlying cognitive mechanisms and manifestation of OCD, depression and even PTSD are the same in TD young people and those with ASD (e.g. Barnhill & Smith Myles, 2001; Boyd et al., 2012; Cook et al., 1993; Ghaziuddin, Ghaziuddin, & Greden, 2002; Hedley & Young, 2006; Howlin & Clemmets, 1995; Mehtar & Mukaddes, 2011; Whitehouse, Durkin, Jaquet, & Ziatas, 2009). This suggests that interventions should be tailored to directly target these symptoms and/or disorder specific manuals should be adapted to treat each separate disorder. Such findings have also led to consideration that ‘development of a cognitive model specific to this population is necessary in guiding therapeutic interventions’ (p. 212; Ozsivadjian & Knott, 2011).

There is some evidence to support the value of developing disorder specific CBT manuals specifically for young people with ASD. For example, Russell and colleagues (2013) focused a large portion of their intervention on OCD specific ERP while McGillivray and Evert (2014) employed techniques such as mindfulness and dysfunctional thought records from the TD literature with both studies resulting in reduced symptomatology. Similarly, well-cited case studies describe modifying and implementing an OCD-specific treatment manual (March and Mulle, 1998) and achieving symptom remission and recovery (e.g. Lehmkuhl et al., 2008; Reaven & Hepburn, 2003). There is clearly a need for replication studies in each of these areas but findings tentatively point to the benefit of developing tailored interventions which specifically meet the neurodevelopmental and mental health needs of this population.

## **Limitations and directions for future research**

### ***Limitations of the literature***

The considerable homogeneity in populations within studies reviewed is a distinct limitation. Samples largely consist of children with good verbal skills and a high IQ. Little is understood about how generalizable such findings are to adolescents or young people with more pervasive developmental delay often associated with autism (Lang et al., 2010;

Reaven, 2011; Van Steensel et al., 2011; Wood et al., 2011). Reaven et al., (2012b) comment on the importance of designing treatment programs specifically for adolescents with ASD to meet their particular developmental needs. Indeed, the Facing your Fears Adolescent program (Reaven et al., 2012b) tailors elements such as the parent component to focus on features of the parent-teen relationship relevant to navigating the transition through adolescence. It also uses i-pads to convey concepts of therapy and encourage diary keeping and home practice in a way that is accessible to typical adolescent functioning. This study did not include a comparator group but findings indicated a significant parent, adolescent and clinician-reported decline in anxiety offering further support for the notion of needs-based rather than generic modifications. Future research should seek to robustly explore ‘the core ingredients of effective treatment’ (p. 18, White et al, 2009) for populations other than high functioning children who are equally vulnerable to suffer with mental ill health.

The lack of published data exploring efficacy of CBT for disorders other than anxiety is a particular limitation of the literature. Prevalence rates indicate that co-morbidity of OCD, PTSD and depression occur at an elevated level compared to TD young people in up to 40% of YP with ASD (e.g. Ammerman, Van Hasselt, Hersen, McGonigle, & Lubetsky, 1989; Ghaziuddin, Weidmer-Mikhail, & Ghaziuddin, 1998; Leyfer et al., 2006; Mandell, Walrath, Manteuffel, Sgro, & Pinto-Martin, 2005; Mehtar & Mukaddes, 2011). It is therefore unclear why there is such a gap in research pertaining to the impact of interventions for these common comorbid mental health disorders. Empirical investigation of the impact of targeted interventions is required to broaden understanding of effective treatments but also to support future iterations of NICE guidance to become more transdiagnostic in nature.

### ***Limitations of the review***

This review employs a rigorous criteria to identify effective studies and appears to be the only one considering studies exploring the efficacy of CBT interventions for mental health disorders other than anxiety. However, bias has been introduced to the review in several ways. Firstly, the lack of independent inter-rating of articles for selection and data extraction limits the confidence with which the review is a) entirely inclusive of available data and b) accurately reflects core components such as the content of CBT and the NOS score. Many checks were put in place to reduce this bias including the second author supervising each stage of the process, the use of the NOS to rate studies and multiple

revisions to ensure an accurate narrative of findings, but the inherent bias of having a single reviewer complete the study cannot be overlooked.

Second, the sole reliance on published data printed in English biases conclusions as published work may be more likely to report larger effect sizes than unpublished studies (Hopewell et al., 2007; Reichow et al., 2011). The findings of this review may, therefore, be an overly ambitious representation of the efficacy of CBT for this population. However, bias can also be introduced by reporting effects of unpublished trials which have not been peer-reviewed for methodological rigor and may not be representative of all unpublished data (Egger, Juni, Bartlett, Hoenstein, & Sterne, 2003). It was determined that published studies most effectively met the requirements of the research question and so would be most clinically relevant. With regards to excluding non-English studies this was unavoidable due to lack of access to a translator. During the search no non-English studies were identified but the possibility of a missed area of research should be acknowledged.

Finally, there is a possibility that the limited inclusion criteria of studies with a comparator group indicating a significant outcome may have occluded effective modifications or mis-identified modifications as effective. Only one study met eligibility criteria but reported a non-significant finding (White et al, 2013) of the MASSI program which has a strong theoretical grounding and employs specific modifications to target social deficits theorised to predict anxiety in people with ASDs. It also includes several modifications which overlap with studies included in the review such as involving parents (e.g. Reaven et al, 2009) offering group and individual sessions and social skills training (e.g. Wood et al, 2015). This may suggest that excluding non-significant findings, as with excluding unpublished data, results in an inaccurate representation of the efficacy of modified CBT. However, there are challenges with the MASSI program such that it involves modules which can be delivered flexibly which may not be suitable for a trial in which consistency across participants is required. Furthermore, the study reported significant effects for social responsiveness but not for anxiety suggesting that excessive focus on social skills training may not be sufficient to support YP with ASDs to manage anxiety. It would seem appropriate that this modification is not recommended to treat co-morbid anxiety but the potential bias introduced to findings by excluding non-significant studies is important to consider.

## **Conclusion.**

These limitations notwithstanding, the current study adds to the understanding of what works for YP with ASDs attending mental health services. Findings are clinically

relevant and synthesise results from the most robust published studies in the area. This review identifies meaningful techniques and methods of delivery which can support YP with ASDs to engage with a program of therapy and experience reduction in anxiety. Preliminary evidence also points to the efficacy of targeted CBT for OCD and depression. There remains a need for future research but in the absence of such work, standardised treatment manuals for TD young people may effectively alleviate mental health symptoms in YP with ASDs when adapted with NICE recommended modifications to structure and disorder specific modifications to content.

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## **Service Improvement Project**

### **Evaluation of a Tailored Training Program to Improve the Assessment and Treatment of Trauma in an Early Intervention in Psychosis (EIP) Service**

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**Introduction:**

**Trauma and Psychosis:** Over the last decade increased emphasis has been placed on understanding symptoms of psychosis as responses to traumatic experiences, including abuse and neglect (Dillon, Johnstone, & Longden, 2012). Prevalence rates of trauma in psychosis ranged from 70%-94% (Bechdolf et al., 2010; Kilcommons & Morrison, 2005), with a recent meta-analysis reporting that patients with psychosis were almost 3 times more likely than controls to have been exposed to traumatic events during childhood (Varese et al., 2012). Research has indicated both a dose response effect, with severity of symptoms increasing with the severity and frequency of abuse, and specificity, where physical abuse was directly associated with positive symptoms and sexual abuse with hallucinations (Kilcommons & Morrison, 2005; Read, Agar, Argyle, & Aderhold, 2003). Child sexual abuse also predicted an increased risk of transition to psychosis from high-risk status (Bechdolf et al., 2010). Such findings have been consistently identified in both population-based studies and prospective studies demonstrating that, even among people not receiving treatment, the presence and severity of childhood abuse is associated with the onset and severity of psychotic symptoms.

Seminal review papers have further explored the specificity and predictive nature of trauma in the onset of psychosis from a theoretical position (e.g. Bentall & Fernyhough, 2008; Daly, 2009; Morrison, Frame, & Larkin, 2003; Read & Ross, 2003; Read, van Os, Morrison, & Ross, 2005). Collectively the authors argue that childhood experiences of abuse, neglect and insecure attachment patterns are likely to contribute to the onset of psychotic symptoms through a stress-vulnerability or biopsychosocial model. They acknowledge the limited evidence supporting a causal relationship between trauma and psychosis, but describe the experience of childhood trauma as a vulnerability factor increasing the risk of developing psychosis. For example, Bentall and colleagues (2008; 2012) developed, and empirically validated, theoretical models linking sexual trauma to hallucinations and victimisation to paranoid beliefs. Both models identified key mediating cognitions and biases suggesting that exposure to trauma may create a vulnerability to developing psychosis through the impact it has on the internal working models of the self and others.

Both studies also highlighted the role of attachment, evaluating research exploring the association between an insecure attachment style and the development of paranoia through low self-esteem and mistrust of others. Further studies have suggested that a disorganised attachment may act as a vulnerability factor leading to the development of psychotic symptoms and dissociation, in response to abuse (Lyons-Ruth, 2003; Ogawa,

Sroufe, Weinfield, Carlson, & Egeland, 1997). Collectively, such research has led to the conclusion that psychotic disorders may be best understood as ‘endpoints of atypical developmental trajectories’ (p.1012, Bentall & Fernyhough, 2008).

***Assessment and Treatment of Trauma in Psychosis:*** Despite this wealth of robust evidence, NICE guidelines for the treatment of psychosis and schizophrenia remain vague about how to address trauma. In 2014, the following updates were made to guidelines for assessing first episode psychosis

*“Assess for post-traumatic stress disorder and other reactions to trauma because people with psychosis or schizophrenia are likely to have experienced previous adverse events or trauma associated with the development of the psychosis or as a result of the psychosis itself. For people who show signs of post-traumatic stress, follow the recommendations in [Post-traumatic stress disorder](#) (NICE clinical guideline 26)”(CG178, 2014)*

While this addition clearly recognises the evidence base indicating the high prevalence rates of trauma, there are several inherent weaknesses. The recommendation is only detailed in relation to first episode psychosis and only for assessment. Treatment options refer to standard practice for established psychosis or PTSD. Adherence to psychosis treatment guidance is generally strong among EI teams with a range of psychological, family and pharmacological interventions available (Bird et al., 2010). However, treating psychosis with medication as a primary intervention is common and there remain barriers to providing psychological interventions in general (Berry & Haddock, 2008) and trauma interventions specifically (Toner, Daiches, & Larkin, 2015), indicating a distinct gap between research and practice with regards to treatment.

In considering guidelines for PTSD, there is a strong emphasis on Trauma-Focussed CBT or Eye Movement Desensitisation and Reprocessing (EMDR). There is an emerging body of evidence to suggest that these treatments are effective for alleviating PTSD symptoms in people with psychosis (e.g. de Bont, Van Minnen & De Jongh, 2013; van den Berg & van der Gaag, 2012) but these studies have been conducted with small samples with between a quarter and a third of participants remaining symptomatic post intervention. Furthermore, research posits that the experience of ‘prolonged and repeated trauma’(p. 337, Herman, 1992), as is so often observed among sufferers of child abuse with severe psychotic symptoms, is not accurately captured by standard PTSD (Cloitre et al., 2011; Herman, 1992).

Such presentations may be better conceptualised as Complex Post Traumatic Stress Disorder (CPTSD) which is typically predicted by multiple interpersonal traumas 'including abuse, neglect, exploitation, betrayal, rejection, antipathy and abandonment' (p.3. Courtois & Ford, 2013) often perpetrated by caregivers or people in a position ordinarily associated with providing nurturing and protection (Cloitre, Garvert, Brewin, Bryant, & Maercke, 2013; Courtois & Ford, 2013). CPTSD has a unique symptom profile including affect dysregulation, negative self-concept and interpersonal disturbances which are not observed in PTSD (Cloitre et al., 2011; 2013) but may be more common among people with trauma-induced psychotic symptoms. CPTSD is also described as requiring a unique treatment program; a phase-based approach to therapy (Courtois & Ford, 2013). This treatment includes 3 integrated phases of therapy including grounding and stabilisation at phase 1 which is designed to build coping strategies, 'remembering' during phase 2 which can include trauma-focused treatments followed by phase 3, 'reconnection' which includes supporting clients to rebuild their life so they are no longer living as a victim. In light of the evidence linking multiple traumas and vulnerabilities to psychosis, and research supporting the need for longer-term more specific trauma-focused interventions, the guidance within NICE to effectively treat psychosis does not yet seem consistent with the growing evidence base.

***Barriers to Implementing Guidance in Practice:*** This lack of clear guidance, coupled with identified personal and service level barriers is likely to inhibit routine assessment and treatment of trauma in psychosis. Barriers identified in the literature occur at the client, staff and organisation levels of services. The lack of provision within mental health services to adequately address trauma among this population has been linked with clients' diagnoses and construct of their illness, staff anxiety about the role of trauma and harming clients through raising it, staff discipline and model of psychosis and a lack of training provision to develop skills in how and when to ask about trauma and how to treat it (Read & Fraser, 1998; Read & Ross, 2003; Toner et al., 2015). Such barriers are likely to impact on the extent to which staff members feel able to ask about trauma. This is partially supported by studies that have indicated that around 2/3 of patients in mental health services report not been asked about experiences of abuse (Lothian & Read, 2002; Read, Hammersley, & Rudegeair, 2007) despite believing there to be a connection between their abuse and symptoms (Read et al, 2006).

Research has highlighted the need for a radical change to assessment and treatment procedures for people with psychosis to incorporate a trauma focus as a standard (Bentall & Fernyhough, 2008; Daly, 2009; Morrison et al., 2003; Read & Ross, 2003; Read et al.,

2005). Although training programs have been developed, such as The Auckland Training Program (Read, 2006; Young, Read, Barker-Collo, & Harrison, 2001) and Complex Trauma and Dissociation (Dillon & Longden, 2013), there are limited published evaluations of their effects.

Furthermore, only around 1/3 of mental health staff reported receiving any specialist training to assess and/or treat trauma (Cavanagh, Read, & New, 2004; Lab, Feigenbaum, & De Silva, 2000), despite positive impacts of training. Effective treatment programs appear to result in a higher rate of identification of trauma histories (Currier & Briere, 2000), increased knowledge and confidence among staff in asking about trauma and initiating appropriate care as well as positive change in practice to support clients with a trauma history (Cavanagh et al., 2004). Key areas of training identified as successful included improving knowledge and skills (Cavanagh et al., 2004) as well as targeting core beliefs about psychosis by developing understanding of ‘why to ask’ (Read et al., 2007; Toner et al., 2015).

***Current Study:*** The aim of the current project was to expand upon the work of Cavanagh et al. (2004) and work collaboratively with a local EIP team to improve adherence to evidence-based practice through reducing barriers to assessing and treating complex trauma presentations. It was hypothesised that working with the team to develop a tailored training program that met their needs would lead to significant improvements in knowledge about trauma, confidence in asking about trauma and initiating care. It was also hypothesised that it would significantly reduce worries staff might have about assessment and treatment, and would change practice through addressing team-specific barriers.

**Method:**

**Participants:** All members of the team were informed about the project and invited to participate (see Appendix 2a). Fourteen members, including management, who represented all disciplines and comprised the core staff of the team (nurses, psychiatrists, psychologist, social worker, care co-ordinator, CAMHS liaison), completed the training. Ten of whom completed the initial focus group and eight completed the follow-up measures. This equated to seven members of staff from the core team (management, psychology, nursing, social care and care co-ordinator) having complete data at all three time points.

**Measures:**

A questionnaire was developed for the purpose of this study employing both closed and open-ended questions (see appendix 2b). It assessed current working patterns with clients with a trauma history and perceptions of personal barriers to working more directly

with trauma. Questions were further subdivided into the following categories; Knowledge about complex trauma including questions such as ‘I know about links between trauma and psychotic symptoms’.

Confidence in assessing and treating complex trauma, including questions such as ‘I am confident that I could identify a Complex PTSD presentation in clients with psychotic symptoms’ and ‘I feel confident that I could complete a course of phase 1 therapy with a client’.

Worries about assessing and treating complex trauma including questions such as ‘I often feel anxious to ask about trauma in case I upset the client’, and ‘Feeling traumatised by the traumatic experiences patients discuss (vicarious traumatisation) worries me about working with trauma’.

Responses were rated on a Lickert scale ranging from 0= strongly agree to 4 = strongly disagree. Questionnaires were administered at three time points, pre- (1 month prior), post- (immediately after) intervention and at 6 month follow-up.

### **Procedure:**

This intervention was approved by the University of Bath ethics committee (13-147) and the trust R&D office (823AWP). It was completed in four stages following guidance from the NHS Institute recommended model for service improvement (Langley, Nolan, Nolan, Norman, & Provos, 2009). This model includes a cyclical process of Planning for change, Doing or implementing changes, Studying the effects of such changes and Acting on the outcomes of evaluation. Practical applications of each stage of this model took place in the following ways:

**Plan:** Planning the training program involved reviewing the literature, consulting with a regional collaborator who formed part of the EI team and consultation with all team members, including management (N=10), through a focus group. A semi-structured interview was used (see questions in Appendix 2c) to identify key areas to be addressed within the training. The focus group was audio recorded and the data transcribed prior to being thematically analysed.

**Do:** The training package was developed from an existing training program created by the regional supervisor for delivery to similar teams within the Trust. Themes identified from the literature and the focus group were used to tailor the training to meet the specific

needs of the team. Training was delivered with 14 members of the team during an interactive half day session in which case discussion and preparation to implement skills also took place.

**Study:** The questionnaire was administered at pre and post intervention and the impact of the training program was measured through change in scores on knowledge, confidence and worries. A six month follow-up meeting was arranged in which the follow-up questionnaire was administered and discussion held with all team members to assess change in practice, knowledge, confidence and worries after having the opportunity to implement the skills taught within the training. Perceived barriers to implementing change were also explored.

**Act:** It was agreed that this project acted as the initial improvement stage of change but that continued cycles were needed to implement the actions required to address barriers impeding implementation of trauma assessment and treatment. Goals identified within the meeting were developed into action points, such as 'to establish monthly trauma supervision groups' which the team and regional collaborator planned how to operationalise within day-to day work to continue improving implementation.

**Data analysis:** This project included a mixed method analysis. Data from the focus group was transcribed by the first author and a thematic analysis was employed. Data was entered into NVivo 10 (QSR International, 2012), a software package for the analysis of qualitative data, and analysed using both deductive and inductive content analysis to support generalisations made (Seale & Silverman, 1997). Based on existing research exploring barriers to mental health professionals enquiring about trauma, deductive content analysis was initially used to code, and expand upon themes within the data (Elo & Kyngas, 2008; Hsieh & Shannon, 2005). This was followed by a process of inductive content analysis in which all uncoded data was annotated and annotations were organised into categories to improve understanding of meaning (Hsieh & Shannon, 2005). A subsection of data was reanalysed by a colleague to ensure reliability of coding and percent agreement employed to assess inter-rater reliability of themes. Although percent agreement has been criticised as being too liberal, it was selected as the data formed nominal variables and analysis of this data formed a preliminary stage of the project so a simple, non-conservative method of analysis was felt to be appropriate (Lombard, Snyder-Duch, & Campanella Bracken, 2002).

Quantitative data derived from the questionnaires was then analysed using a repeated measures analysis of variance. Data was only analysed for participants completing questionnaires at all three time points. A paired samples *t* test was used to assess change in practice that had been enquired about in pre and follow up questionnaires only.

## **Results:**

Thematic analysis yielded several key themes which shaped the training program. Themes were categorised into 3 key areas informed by the literature and structure of the questioning; knowledge of complex trauma, confidence in assessment and treatment methods, worries about working with trauma (see Appendix 2d) for summary models of all themes generated). Inter-rater reliability was acceptable with a percent agreement of 80.6% (Lombard et al., 2002).

Complex Trauma Knowledge: In general the staff team demonstrated a strong overall understanding of what could be defined as complex trauma including dysfunctional family interactions, and childhood sexual and physical abuse.

*'trauma has been a significant part of their parents backgrounds'* (Participant 1)

*'she witnessed her dad being stabbed as a young child and then was involved with, I'm not sure if it was a paedophile ring'* (Participant 6).

But also described more common traumatic experiences and expressed some confusion around differentiating them from complex trauma

*'I think the you know the sort of bullying that happened at school was a traumatic event for all the family'* (Participant 3)

*'I guess it depends what you are defining as trauma'* (Participant 1)

*'are there many people that we are seeing that haven't had some kind of trauma?'*  
(Participant 4)

They recognised the importance of attachment but felt less confident about distinguishing attachment categories relevant to psychosis

*'probably about 20% of people with true psychosis...had good premorbid attachments'* (Participant 1)

and there remained a conflict among the team in beliefs about the model of psychosis as a medical model or psychosocial model

*'thinking about how we differentiate those with trauma from those with true psychotic symptoms' (Participant 1).*

The training, therefore, included a detailed section of recognising attachment categories and challenging beliefs by exploring the psychosocial and neurobiological effects of neglect and abuse on atypical development, related to psychosis.

Confidence in Assessing and Treating Trauma: The team generally felt comfortable in a generic assessment and completing a formulation which often incorporated trauma

*'The outcome is actually pretty good thinking about a formulation that makes sense that's based round trauma diagnosis' (Participant 1).*

There seemed to be less confidence in directly asking about trauma or using structured assessments

*'it's sort of the elephant in the room and by not addressing it almost feels like, cos he is a little bit of a worrier so I find that quite challenging' (Participant 3)*

*'I don't know if it would be helpful for us to look at the way that we provide assessment for first episode psychosis and whether we could be more specific how we assess... cos it sort of feels a bit vague' (Participant 2).*

With regards to intervention, although the team were aware of a phase-based approach to working with trauma, there seemed to be a real mix in approaches to dealing with it across the disciplines

*'Yeah we don't really offer therapy do we' (Participant 8)*

*'As a team generally we are quite focused on the trauma model and there's a few who have been on the training on it as well but we do sort of focus on it as well I don't know if we have got very specific ways of working with it' (Participant 3).*

As such, a focus in training was to provide detailed information on assessment strategies and measures and to provide the theory and skills behind the phase-based approach to working with complex trauma in this client group.

Worries: A wide range of different worries were identified within the team, most of which centred on uncertainty about skills to initiate appropriate care and worries of causing more distress to clients or not being able to contain their symptoms

*'that sense of uncontainment which spills over and is knowing the face of working with people who generate huge amounts of anxiety' (Participant 1).*



To address this, training also contained lots of opportunity for discussion, problem solving and case discussion as well as presentation of the theory behind the phase-based approach to reduce worries through increased awareness of the application of phase 1 in relevant cases.

## ANOVA

Descriptive data of primary variables are presented in Table 1. To explore change in Knowledge, Confidence and Worries with regards to assessing and treating complex PTSD, a series of repeated measures analysis of variance (RANOVA) were conducted.

Table 1: Descriptive analysis of data

<i>Subscale</i>	Pre-training		Post-training		6 month Follow-up	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Knowledge	15.67	2.45	16.75	3.11	17.44	2.83
Confidence	17.10	6.31	23.42	4.78	22.44	4.72
Worries	11.90	4.20	9.83	4.93	10.67	2.50
Number of clients with trauma history	0.71	0.76	-	-	1.29	0.49
Number of clients with whom you enquired about trauma	0.71	0.95	-	-	1.29	0.95
Number of clients receiving direct trauma intervention	0.00	0.00	-	-	0.43	0.53

*NB: - data not collected at this time*

Although the sample size was small (N=7) data met all assumptions of normality, homogeneity and sphericity indicating that it was acceptable to conduct a repeated measures analysis of variance.

RANOVA revealed that the intervention significantly improved staff members knowledge of complex post-traumatic stress disorder,  $F, (2,12) = 5.51, p = 0.02$  (Mauchly's test indicated the assumption of sphericity had not been violated  $\chi^2 (2) = 3.65, p = 0.16$ ). Further contrasts indicated that there was a significant increase in knowledge between pre and post-training ( $p = 0.05$ ), and between pre training and follow-up ( $p = 0.03$ ), but a non-

significant difference between post-training and follow-up ( $p = 0.1$ ). This suggests that gains from training were maintained during the following 6 months.

A similar pattern was observed for confidence, indicating that the intervention significantly improved staff members confidence to assess and treat CPTSD,  $F, (2,12) = 11.59, p = 0.001$  (Mauchly's test indicated the assumption of sphericity had not been violated  $\chi^2 (2) = 2.95, p = 0.23$ ). Further contrasts indicated that there was a significant increase in confidence between pre and post-training ( $p = 0.03$ ), and between pre training and follow-up ( $p = 0.04$ ), but a non-significant difference between post-training and follow-up ( $p = 0.90$ ). This suggests that gains were made immediately following training and maintained during the following 6 months.

The results for worries were not as positive and although there was a general decline in mean level of worry among staff, this decline did not reach significance  $F, (2,12) = 1.28, p = 0.31$  (Mauchly's test indicated the assumption of sphericity had not been violated  $\chi^2 (2) = 0.23, p = 0.89$ ). This suggests that while the intervention improved knowledge and confidence in the techniques, it did not appear to alleviate worries about implementation.

Finally, self-reported change in practice between pre-intervention and follow-up was explored using a paired samples  $t$  test. Results revealed a non-significant change in reported number of clients on caseloads known to have a trauma history ( $t (6) = -1.33, p = 0.23$ ), and with whom staff members are enquiring about trauma ( $t (6) = -1.00, p = 0.36$ ). There was a trend towards increase in the number of clients with whom staff members were directly treating symptoms of trauma ( $t (6) = -2.12, p = 0.08$ ). Individual results also revealed a doubling in the number of clients between pre-training and follow-up with whom some staff members reported working directly on trauma symptoms.

## **Discussion**

***Impact of interventions:*** Consistent with the literature, prior to training, the EI team had a general understanding of prevalence rates of trauma in people with psychosis (e.g. Bechdolf et al., 2010; Kilcommons & Morrison, 2005; Read et al., 2003) and recognised it within many of their clients (Cavanagh et al., 2004; Toner et al., 2015). However, there were mixed views on the role of trauma on symptoms and this varied by discipline with more medically trained professionals describing a 'true psychosis' and more psychologically or socially trained professionals recognising a causal role of trauma in the development of psychosis (Toner et al., 2015).

Several barriers to assessing for and treating trauma were identified by the team. These included a distinct variation in beliefs between team members about the causal mechanism of trauma in the development of psychosis, lack of knowledge and confidence in evidence-based skills to work with trauma, and worries about causing distress to the clients, and themselves (Read et al., 2007; Toner et al., 2015). Addressing these barriers and delivering a tailor made training program to an EI team appeared to improve adherence to evidence-based practice in terms of staff reported rates of assessing for, and treating, trauma.

Staff reported increased knowledge about complex trauma and an evidence-based treatment method and increased confidence in the delivery of assessment and treatment; these gains were maintained at 6 month follow-up. There was also a slight reduction in worries that were previously acting as a barrier to assessing and treating trauma, although this did not reach significance. Furthermore, there was a general trend towards an increase in reports of treating trauma among clients. Several clinicians reported that they had doubled the number of clients with whom they were working with trauma directly and one staff member reported tripling the number of clients they had assessed for trauma between pre-training and 6 month follow-up. Findings of this intervention program replicate those of the Auckland training program (Cavanagh et al., 2004).

These results are particularly promising in the context of the challenges the team had faced during the 6 months following training. At the follow-up meeting, team members revealed that their team managers had left, the team had been relocated and job roles had been reorganised resulting in fuller, more varied caseloads. Team members generally felt that there was less opportunity to work with trauma on a daily basis which contributed to decreased confidence, increased worries and an increased team focus on medication. In spite of these changes however, there was a reported change in the culture within the team such that there were fewer attempts to distinguish symptoms as ‘true psychosis’ and a greater willingness to understand and discuss trauma as part of the overall presentation. Typically studies have indicated that lower levels of staff confidence and an increased ethos among the team to adhere to the biomedical model inhibit practice to treat trauma (Berry & Haddock, 2008; Toner et al., 2015). This provides further support for the efficacy of the current training program in changing practice in the face of such challenges.

The training had raised awareness of the impact of trauma with this population resulting in a request for training to be delivered to EI teams Trust-wide. Collectively, these findings suggest greater overall improvement levels at both the individual and service

level than has been observed by similar manualised training programs (e.g. Cavanagh et al., 2004) and provides tentative support for the importance of working with teams to tailor training packages to their specific needs.

***Impact of Service Improvement Model:*** The PDSA model was selected to guide the intervention as it is recommended by the NHS Institute to ‘provide a framework for developing, testing and implementing changes leading to improvement’ (p.145 Institute for Innovation and Improvement). It was considered that this model appropriately met the needs of the project to support improvement in adherence to evidence-based practice. It provided a clear structure to follow and guided the development of measures to evaluate change resulting from the training. However, through completing the project it became clear that there were barriers at the organisational level which may have limited the extent of change to practice which could be implemented. An alternative framework which may have helped identify and target these barriers is a root cause analysis using the five why’s. The NHS Institute also recommends this model as a framework for identifying problems as part of service development. Employing the five why’s may have improved the efficacy of the training through identifying the planned service level changes thereby meeting the needs of the team in the context of the wider organisational changes which were not anticipated through the targeted PDSA framework.

### **Limitations**

***Program limitations:*** While the program was based on evidence it was not manualised and non-validated. Developing a training package in this bottom-up way permitted idiosyncratic developments which may have met the needs of the team more effectively than a standardised training package. However, the lack of validation may limit external validity.

A second limitation was the timescale of the program. It was delivered in ½ a day which is considerably shorter than similar training programs (e.g. 1 day Auckland training program (Read, 2006) and 2 day Trauma and Dissociation (Dillon & Longden, 2013) and staff reported that they would have valued more time for skills practice. Future interventions should consider timing options, although in light of increasing demands being placed on reduced staff teams, offering a shorter intervention, which appears effective may be preferable.

***Study limitations:*** The questionnaire was developed from the literature and designed to assess the impact of key components of the training program but it was not assessed for criterion validity. There were limited existing measures to draw on as studies

investigating EI staff members perceptions of asking about trauma typically rely on qualitative investigation (e.g. Toner et al., 2015) and those evaluating similar training employed idiosyncratic measures (e.g. Cavanagh et al., 2004). Results yielded in the current study appear comparable but caution must be taken when drawing conclusions about efficacy of improvement when employing a non-validated measure.

In addition, results rely entirely on self-report so even though questionnaires were anonymised there is inherent risk of bias due to staff members being invested in reporting that they have made improvements to their service. There was sufficient time between administering the questionnaire to limit recall of responses leading to some confidence for the fidelity of findings but future work should seek to employ more objective measures of change in practice. Specifically, this could include measuring service user perspectives to obtain an objective measure of experienced change in staff practice surrounding assessing and working with complex trauma histories. O'Toole and colleagues (2004) describe how 'experiential evidence is essential for a service evaluation to be meaningful and complete' (p.320), while the NHS institute recommends the involvement of service users in all service improvement projects. Service users were not involved in the current project due to feasibility issues but it is recognised that this is a distinct limitation. To ensure thorough evaluation of change in practice, rather than just in perception, future research should seek to explore service user perspectives, alongside staff report, at pre and post intervention.

### **Service Implications**

Training consistently improves confidence and practice in asking about and working with trauma among patients with serious mental illness (Cavanagh et al., 2004; Currier & Briere, 2000; Young et al., 2001). Conversely a lack of adequately trained staff greatly reduces the implementation of psychosocial interventions within EI teams (Singh, Wright, Joyce, Barnes, & Burns, 2003). The success of this training program, and others like it (Cavanagh et al., 2004; Read, 2006) provides support for increasing training across EI services to improve treatment options for patients (e.g. Bentall & Fernyhough, 2008; Daly, 2009; Morrison et al., 2003; Read & Ross, 2003; Read et al., 2005; Toner et al., 2015).

Facilitating skill development in Phase 1 treatment techniques was identified as the most helpful aspect of training which built confidence in the ability to employ this approach with clients. However, the intervention appeared to have little impact on worries about implementation. As such, ensuring that training programs include phase 1 skills development alongside a specific component to address worries, such as a regular

supervision slot, is likely to result in increased adherence to trauma-focused assessment and intervention (Tarrier, 2005).

The continued evaluation of the current project also resulted in planning for additional actions to be implemented into the service. Plans included top-up training and focused supervision centred on trauma-focused case discussion. Studies have indicated that in order for change achieved through training to be maintained, supervision and top-up courses are essential (Bradshaw, Butterworth, & Mairs, 2007). As such, making provision for on-going training and supervision following initial training sessions will form a vital part of future development for this and other EI services.

While providing training for staff is crucial to effect change, research highlights the need to address the systemic components impacting upon service delivery (Berry & Haddock, 2008; Read & Fraser, 1998; Toner et al., 2015). ‘Barriers to implementation of psychological interventions exist at the level of individual staff, service recipients and of organizations’ (p.427, Berry & Haddock, 2008). The current project focused on addressing barriers at the staff level, however, involving service users in the planning and delivery of treatment can reduce stigma and improve engagement with psychosocial interventions (Berry & Haddock, 2008; O’Toole et al., 2004). Similarly, developing a culture of understanding of the psychosocial model of psychosis rather than the biomedical model, at the organisational level is necessary for trauma to be prioritised in assessment and treatment (Toner et al., 2015).

By addressing each of these areas as well as delivering tailor made training programs to meet the needs of the clinicians who will deliver the interventions, it is anticipated that the current gap between research and practice will begin to be bridged (Berry & Haddock, 2008). Achieving this will increase the delivery of evidence-based practice within EI teams and support clients to disclose and overcome their trauma experiences, thereby potentially reducing psychotic symptoms.

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## **Main Research Project**

**A preliminary investigation of attachment style, inflated responsibility and excessive reassurance-seeking behaviours in adolescents with OCD**

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**Target Journal: Child Development**

## **Introduction**

Reassurance seeking has been identified as a symptom of OCD (Rachman, 2002; Salkovskis, 1985), and is thought to have a clear developmental trajectory, frequently occurring in early childhood, as a response to anxiety, and gradually declining with age and emotional maturity (Kobori & Salkovskis, 2013). It has been suggested that excessive reassurance seeking (ERS), as seen in clinical problems such as OCD, may be linked to disturbances of attachment and atypical developmental trajectories in this respect (e.g. Abela et al., 2005; Kobori & Salkovskis, 2013; Stuart & Noyes, 1999). From a cognitive-behavioural perspective ERS is understood to stem, in part, from an inflated sense of responsibility for harm and be motivated by a perceived need to check with another person and to transfer this to alleviate associated distress (Rachman, 2002; Salkovskis, 1985).

### **Inflated Responsibility in OCD**

The role of responsibility in OCD is considered within the current study in terms of how it relates to both ERS and disturbed attachment. Salkovskis (1985) posits that for people with OCD, appraisals typically revolve around a sense of personal responsibility for harm that they will be blamed for. This appraisal is intolerable to them and this leads to intense discomfort and the urge to transfer responsibility to others and an attempt to reduce harm (Rachman, 2002; Salkovskis, 1985). There is a considerable body of evidence to support the presence of inflated responsibility perceptions within OCD samples compared to anxious and healthy control populations (Barrett & Healy, 2003; Freestone, Ladouceur, Gagnon, & Thibodeau, 1993; Ladouceur, Rheume, & Aublet, 1997; Libby, Reynolds, Derisley, & Clark, 2004; Salkovskis et al., 2000). Manipulation studies have also consistently demonstrated the relationship between heightened responsibility conditions and increased OCD symptomatology, including elevated desire to engage in actions to reduce discomfort (Shafran, 1997), increased checking behaviours (Arntz, Voncken, & Goosen, 2007; Reeves, Reynolds, Coker, & Wilson, 2010) and increased perception of the likelihood and severity of harm occurring (Lopatka & Rachman, 1995).

It has been suggested that an inflated sense of responsibility can develop in response to early experiences. It may act initially as an adaptive coping strategy in a situation where a parent is emotionally or practically unavailable, later becoming a vulnerability factor for the onset of an obsessional disorder (Salkovskis et al., 2000) as it motivates compulsive behaviours, including ERS (Rachman, 2002; Salkovskis, 1985).

## **ERS in OCD**

ERS has been described as ‘the most frequent interpersonal manifestation of OCD’ (p. 25; Kobori, Salkovskis, Read, Lounes, & Wong, 2012). It is thought that people with OCD excessively seek reassurance about perceived threats likely to result in harm to the self or others, (e.g. fire, theft, disease; Cougle et al., 2012; Parish & Radomsky, 2010; Rachman, 2002) and may do so more carefully and intensely than people with other anxiety disorders (Kobori & Salkovskis, 2013). Salkovskis, Shafran, Rachman, and Freeston (1999) suggest that ERS can act as a ‘super safety-seeking behaviour’ as it reduces anxiety while also transferring responsibility for harm but maintaining preoccupation and preventing disconfirmation of the feared consequences. This is due to the fact that reassurance provides only a temporary relief from distress at best (Kobori & Salkovskis, 2013) and possibly increases responsibility attributions (Lopatka & Rachman, 1995) and doubt, perpetuating a cycle of long-term compulsive reassurance seeking (Salkovskis & Warwick, 1986) at worst.

ERS may be less specific to OCD than originally thought, commonly occurring in other anxiety problems (Cougle et al., 2012; Kobori & Salkovskis, 2013; Rector, Kamkar, Cassin, Ayearst, & Laposa, 2011). This observation has contributed to the suggestion that ERS may have a similar developmental trajectory to anxiety more generally and arises in response to disruptions in sense of security within attachment relationships (Cougle et al., 2012; Kobori & Salkovskis, 2013).

## **Attachment and symptoms of OCD**

The role of insecure attachment has been highlighted as instrumental in accounting for ERS in depression and health anxiety (e.g. Abela et al., 2005; Stuart & Noyes, 1999) and ERS has been described as ‘more centrally related to anxious attachment’ (p.916; Rector et al., 2011). This is because as children mature they would usually be expected to make the transition from reliance on adults for information about safety to a position of being able to internalise such judgements; insecure attachment might be expected to interfere with this process. Studies including samples of non-clinical participants have also shown that insecure attachment is associated with OC symptoms via inflated responsibility (e.g. Doron et al., 2009; Haciomeroglu & Karanci, 2014). Those few studies which have explored the role of attachment with clinical OCD samples have demonstrated inconsistency in the presence of insecure and disorganised patterns of attachment and neither presentation was found to be specific to OCD compared to depression (Ivarsson, Granqvist, Gillberg, & Broberg, 2010; Myhr, Sookman, & Pinard, 2004).

Due to the inconsistency in findings and an apparent lack of specificity between insecure attachment as a broad construct and any one disorder it is considered important to explore the role of core attachment-related behaviours. As inflated sense of responsibility is such a central component to OCD and ERS is thought to develop, in part, in response to a lack of ability to rely on the caregiver to take responsibility, role-confusion within the parent-child relationship may be a key attachment-related behaviour to understand the developmental trajectory of these factors. It has been suggested that children who take on a parental role within the parent-child relationship are more likely to experience emotional distress, including anxiety disorders (Hennighausen, Bureau, David, Holmes, & Lyons-Ruth, 2011; Johnston, 1990; Stein, Reidel, & Rotheram-Boras, 1999). Role-confusion, wherein the child takes on an excessive amount of responsibility to support the parent, practically or emotionally, and the parent is unable to consistently respond to the child's emotional and developmental needs in a parental way may be conceptualised as a form of disorganisation and disruption to the attachment process (Hennighausen et al., 2011; Vulliez-Coady, Obsuth, Torreiro-Casal, Ellertsdottir, & Lyons-Ruth, 2013).

There is some evidence to suggest that parents of children with OCD may be less able to remain in a supportive parental role. In comparison to parents of anxious and non-clinical children, parents of children with OCD, show less warmth, positive behaviour and problem solving strategies, are far less encouraging of adolescent autonomy and tend to be overprotective, perfectionist, demanding, critical and employ guilt induction in their parenting style (Barrett, Shortt, & Healy, 2002; Haciomeroglu & Karanci, 2014; Waters & Barrett, 2000). Such behaviours have, in turn, been linked with elevated OCD symptomatology including inflated responsibility (Haciomeroglu & Karanci, 2014) and increased compulsions or checking (Amir, Freshman, & Foa, 2000).

In light of such findings, there is a need to robustly evaluate attachment related behaviours, particularly role-confusion, in a sample of adolescents with OCD to contribute to the understanding of its role and specificity.

## **The Present Study**

The present study seeks to test this notion and examine whether adolescents with OCD display role-confusion in interactions with their parents. It also seeks to add to the adult literature and examine the specificity of ERS and inflated responsibility to OCD compared to other anxiety disorders in an adolescent sample. It is hypothesised that:

- 1) Role-confusion will be prominent among the clinical groups but will be most prevalent among dyads in the OCD group.
- 2) Inflated responsibility will be elevated among the OCD group compared to the anxiety group and healthy controls
- 3) ERS will be elevated in the clinical groups compared to controls but intensity and carefulness of reassurance seeking will be highest among the OCD group

**Method:**

*Participants:* Adolescents were eligible for participation if they were aged between 11 and 18, spoke English, and could participate with a birth or adoptive parent. Clinical participants had to have OCD or any other anxiety disorder. Adolescents with co-morbid disorders or autistic spectrum disorders were included providing the OCD or anxiety disorder was identified by their clinician as their primary disorder, distinguishable from any other co-morbidity. Participants were excluded if they were not living with a carer who had raised them to ensure that results could not be conflated by an attachment disorder and participants with a moderate to severe learning disability were excluded due to the requirement of completing written materials.

Ninety-Five adolescents and their parents who met these criteria were initially referred and invited to participate in the study. 33 families declined the invitation, one family was excluded due to a non-English-speaking parent, two families were excluded due to excessive complex family circumstances and two families who completed the study were excluded from data analysis due to diagnostic uncertainty. The sample for the present study included 57 adolescents and their primary caregiver. The sample comprised of three sub-groups; adolescents with OCD ( $n = 19$ ), adolescents with other primary anxiety disorders ( $n=19$ ; Social Anxiety Disorder; Generalised Anxiety Disorder; Emetophobia; Panic Disorder) and healthy controls (HC;  $n = 19$ ).

Adolescents were aged between 11 and 17 with a mean age of 14.28 years. Two thirds of the adolescents were female ( $n=38$ ) and one third male ( $n=19$ ). 70% of parents were married 16% separated/divorced, 9% cohabiting and 5% single. 86% of caregivers were mums (including one step mum). Around 20% of the sample reported an annual household income of £20,000 or less with the remaining 80% of the sample earning between £31,000 and £51,000+. The sample was predominantly White British with 5% describing themselves as Black British or 'other'.

*Procedure:* All procedures were approved by the University of Bath ethics committee (14-145), Central London Research Ethics Committee (IRAS 137937-

13/LO/1642) for English research sites and by the National Institute for Social Care and Health Research Permissions Co-ordinating Unit (NISCHR.PCU) for Welsh sites, as well as the relevant R&D offices (English sites: 3270; Welsh sites: HD/14/069). Participants from the OCD and anxious samples were recruited through CAMH services in England and Wales. Clinicians identified potential participants from their caseloads who met eligibility criteria. Control participants were recruited through a sample of convenience who were broadly age and gender matched to the clinical samples and recruited from similar geographical locations. Information forms (see Appendix 3a) were given and the first author contacted families within one week to invite them to participate.

Once consent was provided parents and adolescents were invited to attend the CAMHS clinic to complete the procedure. 35% (n= 20) of participants completed the study within their home due to difficulty travelling to the clinic. Participants completed the questionnaire packs while the first author was in the room to ensure that they could ask any clarifying questions if necessary. The procedure outlined by the authors of the Goal-corrected Partnership in Adolescence Coding Scheme (GPACS; Hennighausen et al., 2011) was then followed. Parents and adolescents completed an issues checklist to rate feelings of anger when discussing recent topics of disagreement, such as bedtime or chores. A similarly rated topic was selected for discussion and the adolescent recorded a statement of their position on the topic, in the absence of the parent. They then completed a filmed five minute unstructured reunion followed by a 10 minute discussion of the disagreement initiated by replaying the adolescent's statement.

A debrief of the study's aims and experience of participation was offered and adolescents were given a £5 voucher for their participation. The procedure took between 60 and 90 minutes. The first author then coded all tapes in accordance with the GPACS coding manual. Training had been provided in this procedure prior to the tapes being coded and reliability of coding was verified by the trainer (Dr Obsuth) who blind rated 10% of the material.

*Measures:* Adolescents and their parents completed a questionnaire pack which included questions to assess demographics (age, gender, ethnic origin, family composition and Social Economic Status). Internal consistency was calculated for the current sample for each scale and Cronbach's alphas are reported in the results section.

*Obsessive-Compulsive symptoms:* Adolescents completed the Obsessive-Compulsive Inventory for children (OCI-cv; Foa et al., 2010) to screen for the presence of clinically significant OCD among participants. This is a shortened version of the adult OCI



comprised of 21 items with adjusted language, reduced response options and which only assesses frequency of symptoms to make it more accessible. It includes all seven subscales (Obsessions, Checking, Ordering, Washing, Hoarding, Doubting, Neutralising) identified within the original OCI but fewer items within each subscale.

*Anxiety Disorders:* Adolescents completed the Revised Children's Anxiety and Depression Scale (RCADS; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) to assess general anxiety and depressive symptoms. The RCADS is a 47-item questionnaire with six subscales including: separation anxiety disorder (SAD), social phobia (SP), generalized anxiety disorder (GAD), panic disorder (PD), obsessive compulsive disorder (OCD), and major depressive disorder (MDD).

*Inflated Responsibility:* Adolescents completed the Responsibility Attitudes Scale (RAS; Salkovskis et al., 2000). The RAS is a 26 item questionnaire designed to elicit general responsibility beliefs. This measure has not been validated in a child and adolescent population but has been employed with children and adolescents (e.g. Barrett & Healy, 2003; Libby et al., 2004).

*Parent mental health:* Parents completed the Obsessive Compulsive Inventory-Revised (OCI-SV; Foa et al., 2002) to rate their own OC symptoms. This measure is an 18 item measure which was derived from the original OCI and contains all seven subscales. The Patient Health Questionnaire version 9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001) and the General Anxiety Disorder version 7 (GAD-7; Spitzer, Kroenke, Williams, & Lowe, 2006) were employed to assess for parental depression and anxiety respectively. The PHQ-9 is comprised of nine items and yields categories of severity from mild (5) to severe (20). The GAD contains seven items and also includes categories of severity from mild (5) to severe anxiety (15).

#### *Composite measures*

*ERS:* Parents and adolescents also completed an adapted version of the Reassurance Seeking Questionnaire (ReSQ; Kobori & Salkovskis, 2013). This contained modified language, such as boyfriend/girlfriend instead of partner, and incorporated two of the four scales, which had been found to show specificity to OCD. The Intensity Scale included 18 items asking how often the sufferer asked each person for reassurance before they could stop and the Carefulness Scale included 11 questions enquiring about methods used to seek reassurance. Parent and adolescent reports were combined to form a composite measure of observed and self-reported ERS.

*Role-Confusion:* Attachment-related behaviours were coded from the videotaped interactions using the GPACS manual. Behaviours used to manage and resolve a mild conflict situation are coded according to 10 subtypes of behaviour comprising five dyadic interaction scales (security, mutual respect, hostility, role-confusion, odd/disoriented; for full review of these scales see Brumariu, Obsuth, and Lyons-Ruth (2013)). Coding was completed by the candidate and the coding trainer blind rated 10% of the material. A high degree of reliability between coders was achieved with an average intraclass correlation of .89 with a 95% confidence interval. ICC ranged from .82 to .93 indicating good to excellent reliability ( $F(59,59) = 2.64, p < .001$ ). For the present study, the dyadic interaction scale of parental role-confusion and adolescent caregiving behaviour was employed.

*Analysis:* Apriori hypotheses predicted that primary variables would be more prominent among the clinical groups compared to the healthy controls and most prominent among adolescents with OCD compared to anxiety disorders. To assess this, group means on each of the measures would be compared using Analysis of Variance (ANOVA). Planned orthogonal contrasts would then be completed for the specified hypotheses to compare the clinical groups to the healthy control group followed by a comparison between clinical groups.

*Power Calculation:* Using G\*Power 3.1 the estimated sample size required to detect a large effect with power equal to .80, using the statistical method of main effects Analysis of Variance to compare means within and between groups is 64 participants. With three groups this equates to an  $N$  of 22 participants per group to have equal numbers of participants in each group.

*Missing Data Imputation:* Missing Value Analysis (MVA) was conducted on the data set demonstrating that between 1 and 12% of data was missing for the adolescent reported target variables and between 3 and 17% for the parent reported data. Little's missing completely at random (MCAR) test revealed that there was no pattern to the missingness across the data set ( $\chi^2(60) = 77.60, p = .06$ ) but as the data had not been collected at random it could be classified as Missing at Random (MAR) rather than MCAR (Scheffer, 2002). As the sample size is so small imputation was preferable to listwise deletion so missing data were imputed using EM in SPSS which is considered an appropriate method of imputation for MAR data (Scheffer, 2002). The imputation is calculated based on observed relationships between variables, maximising variance and creating a less biased estimate than deletion or mean substitution (Acock, 2005; Fox-Wasylyshyn & El-Masri, 2005).

## Results

### Overview

The demographic status of groups are described, followed by calculated internal consistencies for measures not previously fully validated. Child and parental psychopathology and related variables are compared across groups. The key outcome measures of attachment, inflated responsibility and ERS are then presented.

### Demographic Status

This sample was largely homogenous with the exception of a group difference in gender ( $F(2, 54) = 4.5, p = .02$ ) with significantly more boys in the OCD group than the anxiety group ( $p = .02$ ) but not the HC group ( $p < .09$ ). There were no significant differences between groups in age ( $F(2, 53) = .24, p = .79$ ), with a mean age of 14 (range 11-17), ethnicity, ( $F(2, 54) = .62, p = .54$ ), household income ( $F(2, 50) = 2.0, p = .15$ ), or family composition (parental marital status  $F(2, 54) = .30, p = .64$  or who adolescent lives with  $F(2, 54) = 1.55, p = .22$ ).

### Internal consistency of Scales

Cronbach's alpha was calculated for each of the scales used in the present study demonstrating acceptable to excellent internal consistency.

*Table 1:* Internal consistencies for each scale employed in analysis

Scale	Cronbach's alpha
Adolescent OCI	.94
RCADS-Anxiety	.98
RCADS-Depression	.95
Parent OCI-R	.91
Parent Anxiety -GAD 7	.90
Parent Depression- PHQ9	.86
Responsibility- RAS	.97
Adolescent ReSQ- Intensity	.86
Adolescent ReSQ-Carefulness	.90
Parent ReSQ- Intensity	.87
Parent ReSQ- Carefulness	.90
ReSQ composite	.94
Role-confusion GPACS	.83

These findings are especially important to consider in relation to the RAS, ReSQ and GPACS which have not previously been validated with an adolescent sample.

## Descriptive Psychopathology

Criterion groups were drawn from adolescents with OCD, other anxiety disorders and healthy controls. Comparisons of children and parents from each group on each of the target variables appear below.

Table 2: Means and SDs of all variables of interest across groups.

Variable	OCD		Anxiety		Healthy Controls	
	Mean	SD	Mean	SD	Mean	SD
Child OC symptoms	24.32	9.90	14.21	7.79	6.68	5.73
Child anxiety symptoms	51.79	22.81	48.68	23.63	18.21	14.67
Child depression symptoms	14.63	8.67	13.84	8.49	5.32	6.00
Parent OCD	10.53	12.23	5.83	6.73	4.42	4.79
Parent Anxiety	5.83	5.80	5.05	4.74	1.95	2.32
Parent Depression	6.00	5.38	4.56	4.20	2.39	3.11

### Measures of mental health

Mean comparisons and Tukey post hoc comparisons were conducted on measures of OCD, anxiety and depressive symptoms in parents and adolescents to test for any between group differences.

*Adolescents:* There was a significant main effect for OC symptoms ( $F(2, 54) = 23.30, p < .001, \omega = .66$ ) with adolescents in the OCD group reporting significantly higher levels of OC symptoms than those in the anxiety ( $p = .001$ ) or HC groups ( $p = .001$ ). There were significant main effects for anxiety symptoms ( $F(2, 54) = 16.9, p = .001, \omega = .58$ ) and depression ( $F(2, 54) = 8.3, p = .001, \omega = .45$ ). Adolescents in the OCD and anxiety groups were not significantly different on anxiety ( $p = .89$ ) or depression ( $p = .95$ ) but both clinical groups reported equally higher rates of anxiety (OCD  $p = .001$ ; Anxious  $p = .001$ ) and depression (OCD  $p = .001$ ; Anxious  $p = .001$ ) than the HC group

*Parents:* Parents reported equally low OC symptoms across all groups ( $F(2, 53) = 2.7, p = .08, \omega = .24$ ). There were significant main effects for anxiety symptoms ( $F(2, 53) = 3.90, p = .03, \omega = .31$ ) and depression ( $F(2, 51) = 3.2, p = .05, \omega = .27$ ). Parents of adolescents with OCD were not significantly different from the anxious group on anxiety ( $p = .86$ ) or depression ( $p = .58$ ) nor were parents of anxious adolescents significantly

different from the HC group on anxiety ( $p = .09$ ) or depression ( $p = .30$ ). Parents in the OCD group reported significantly higher rates of anxiety ( $p = .03$ ) and depression ( $p = .04$ ) than parents of healthy controls.

### *Main comparisons*

Mean group comparisons were tested for the primary hypothesised variables of attachment, inflated responsibility and ERS.

*Table 3: Means and SDs for target variables*

<b>Variable</b>	<b>OCD</b>		<b>Anxiety</b>		<b>Healthy controls</b>	
	Mean	SD	Mean	SD	Mean	SD
Inflated responsibility	133.06	33.41	115.63	33.86	83.34	36.10
ERS	112.42	42.36	100.98	30.90	70.00	26.88
Role-Confusion	6.00	1.05	5.11	1.73	3.21	.98

***Inflated Responsibility:*** Results illustrated a significant group difference ( $F(2, 54) = 10.2, p = .001, \omega = .24$ ). Adolescents in the clinical groups reported significantly inflated responsibility compared to adolescents for the HC group ( $t(54) = 4.23, p = .001, r = .50$ ). Mean rates of responsibility attributions were highest among adolescents with OCD but scores were not significantly different from those in the Anxiety group ( $t(54) = -1.56, p = .13, r = .22$ ).

***ERS:*** Findings again indicated that there was a significant main effect ( $F(2, 54) = 7.9, p = .001, \omega = .44$ ). Mean scores were somewhat higher for adolescents with OCD than adolescents with Anxiety but this difference was not significant ( $t(54) = -1.03, p = .31, r = .14$ ). ERS was however, higher among adolescents in both clinical groups compared to the HC adolescents ( $t(54) = 3.83, p = .001, r = .44$ ). This pattern of results was the same for the subscales of Intensity and Carefulness illustrating a significant difference between the clinical groups and HC group (Intensity,  $t(54) = 3.40, p = .001, r = .42$ ; Carefulness,  $t(54) = 3.56, p = .001, r = .44$ ) but non-significant differences between the OCD and anxious group in the intensity ( $t(54) = -.90, p = .37, r = .12$ ) and carefulness ( $t(54) = -.98, p = .33, r = .13$ ) with which adolescents sought reassurance.

**Role-confusion:** Analysis revealed that the measure of role-confusion violated the assumption of homogeneity of variance (Levene's statistic:  $F(2, 54) = 4.27, p = .019$ ). To adjust for this, the LG10 and Square Root transformations were administered but data could not be transformed so Welch's F ratio is reported. According to Field (2005) this controls for Type 1 error rate whilst maintaining power to detect effects.

Results indicated that role-confusion was significantly different between groups ( $F(2, 34.59) = 36.11, p = .001, \omega = .66$ ). Planned contrasts indicated that role-confusion was significantly more prevalent in the clinical groups compared to the HC group ( $t(45.62) = 7.23, p = .001, r = .73$ ) and was approaching significance between the OCD group compared to the Anxiety group ( $t(29.76) = 1.93, p = .064, r = .33$ ). Although not of primary interest, comparisons were also completed on all other scales of attachment-related behaviours (see Appendix 3b). Results were elevated among the clinical groups compared to the HC group but not significantly different between the anxiety and control groups on all scales.

*Table 4:* Breakdown of prevalence of parent and adolescent behaviours observed

	OCD		Anxiety		Healthy Control	
Prevalence of role-confused behaviours	Parent %	YP%	Parent %	YP%	Parent %	YP%
none	0	0	10.5	10.5	42.1	47.4
infrequent	15.8	26.3	36.8	47.4	47.4	52.6
moderate	63.2	52.6	36.8	21.1	10.5	0
Frequent	21.1	21.1	15.8	21.1	0	0
consistent	0	0	0	0	0	0

To illustrate the variation in observed role-confused behaviour further, the OCD sample displayed predominantly moderately role-confused attachment-related behaviours with 63% of parents and 52% of adolescents achieving a moderate score compared to 36% of parents and 21% of adolescents in the anxious group and only 10% of parents and no adolescents in the HC group. Similar proportions of parents and adolescents displayed high levels of role-confusion in the OCD (21.1% parents and 21.1% adolescents) and the anxious groups (15.8% parents and 21.1% adolescents) whereas no parent-adolescent interactions in the healthy control group were observed to hold high levels of role-confusion.

## Discussion

This study aimed to build on existing literature exploring the role of a core attachment-related behaviour and examining the prevalence and specificity of inflated responsibility and ERS in adolescents with OCD. Results indicate that inflated

responsibility attributions were elevated in the clinical groups but not specific to OCD and, similarly, levels of ERS were raised in clinical samples but did not appear to be OCD specific. Levels of observed role-confusion were raised among the clinical groups and appeared somewhat specific to OCD although not to the degree hypothesised.

With regards to inflated responsibility the lack of specificity is inconsistent with studies that have found significant differences between participants with OCD and anxiety (Arntz et al., 2007; Kobori & Salkovskis, 2013; Libby et al., 2004; Salkovskis et al., 2000). Similarly while the difference in intensity and carefulness of ERS between healthy and clinical groups was consistent with the adult literature the lack of specificity to OCD was not (Kobori & Salkovskis, 2013; Parish & Radomsky, 2010). It is important to note that the majority of this research employs an adult sample and among studies exploring inflated responsibility or ERS with younger samples, there is either inconsistency in the presence of significant differences between clinical groups (inflated responsibility; Barrett & Healy, 2003; Libby et al., 2004) or a lack of comparison with a clinical group (ERS Abela et al., 2005; Abela, Zuroff, Ho, Adams, & Hankin, 2006). Thus making it difficult to draw firm conclusions about the lack of specificity identified within the current study.

Role-confusion was also less specific to OCD than predicted but there was a greater proportion of parent-adolescent dyads displaying moderate levels of role-confusion in the OCD sample than in the anxious or HC groups. Parents in this group generally presented as more self-referential and emotionally distant focusing on their position rather than supporting the adolescent during moments of emotional vulnerability or to assert their position to problem solve. Adolescents within this group largely appeared stifled by the parent's need for validation displaying either reduced ability to problem solve or an apparent heightened level of distress in asserting an individual point of view. They would often capitulate to their parent's position and appeared to be wary of parents' emotional state.

While role-confusion has not been directly measured previously with adolescents with OCD, some of the behaviours observed are consistent with those reported to be specific to the interactions of parents and adolescents with OCD (Barrett et al., 2002; Hacıomeroglu & Karanci, 2014; Waters & Barrett, 2000) but again the lack of specificity between clinical groups in the current study was unexpected.

It is possible that the lack of significant findings are due to insufficient power. When compared to existing studies employing an adolescent sample (Libby et al, 2004), item mean scores on measures of responsibility attitudes for the OCD and anxious groups

were higher and there was also a slightly greater difference between the groups in the current sample. However, the SD for the anxious sample was also higher suggesting a greater variation in scores among the anxious sample and therefore greater overlap between the two groups. Libby and colleagues (2004) recruited 28 young people in each of their clinical groups compared to 19 in the current study so the greater variation across a smaller sample may have accounted for the difference in significant findings. Support is provided for this conclusion by the findings of Barrett and Healy (2003). Although they used a different measure of responsibility they recruited 17 young people with anxiety and found a higher SD in the anxious group than the OCD group. The authors concluded that the lack of significant difference may be due, in part, to insufficient power.

With regards to ERS, in comparison to Kobori & Salkovskis' (2013) findings, item mean scores and SDs for the subscales of intensity and carefulness are roughly comparable but they employed a considerably larger sample and yielded significant results. This further suggests that with greater power, the difference between scores of adolescents with OCD and anxiety may have reached significance.

That being said, it is also necessary to consider the possibility of a true negative finding between the clinical samples. Barrett & Healy (2003) suggested that a cause of their negative finding may be related to the younger age of their sample ( $M=9-10$ ). They discussed the impact of the developmental stage of their participants on cognitive processes related to beliefs about responsibility and proposed that differentiation in cognitions may occur later in adolescence. Mean age of the current sample was 14 representing early adolescence in which Piaget's formal operational stage of cognitive development would still be consolidating. This may be particularly relevant in light of the reliance on measures developed for an adult population. However, internal consistency on these measures for the current sample was excellent and the mean age of Libby et al (2004) sample was also 14 suggesting cognitive development may not fully account for the non-significant finding between clinical samples in this study.

Alternatively, it is possible that the current study adds to literature suggesting that inflated responsibility, ERS and specific early experiences act as vulnerability factors but must interact with other factors in order to become specific to obsessional disorders (e.g. Halldorsson 2015; Salkovskis et al, 1999). Salkovskis & Forrester (2002) discuss the importance of differentiating between factors which are specific to OCD and those which are relevant to the phenomenology but may also underlie anxiety disorders more generally. In the instance of a non-significant difference between people with OCD and other anxiety



disorders, one may conclude that the constructs could be *relevant* vulnerability factors but that once OCD develops, other factors may be more *specific* to the maintenance of it. When applied to the current study, this may suggest that a propensity to take on a caregiving role, for example, could act as a vulnerability factor to internalise an inflated sense of responsibility and limit the ability to trust caregivers to hold responsibility and provide reassurance thereby limiting the development of self-reassurance skills (Salkovskis et al., 2000). However, it will only be in response to critical events that such beliefs and behaviours would develop into an obsessional disorder making such factors relevant but not unique to OCD when compared to people with more general anxiety disorders.

In relation to this, Salkovskis and colleagues (1999) allude to the importance of taking a more granular approach in order to identify specificity and to explore differentiation in these processes across subgroups of adolescents with varying symptom subtypes. That is, to explore whether inflated responsibility beliefs and ERS behaviours are more specific to young people with moderate role confusion who have developed broad based rituals to protect others from general harm compared to the young person who experienced a serious illness and developed specific cleaning rituals to protect the health of themselves. The authors suggest that by analysing all subgroups simultaneously there is a possibility that specificity of core factors may be cancelled out which may explain the lack of significant findings in the current study. Separate analyses by symptom subgroups may be a fruitful direction for future research to contribute to understanding of the developmental trajectory of the core maintenance features of OCD.

### **Limitations**

There are several limitations to the current study which warrant discussion and point to areas for future research. This study offered preliminary investigation to the possibility of an interpersonal model of OCD examining the role of specific attachment-related behaviours in adolescents with OCD. Full exploration of an interpersonal model and comparison of relationships between variables across groups was limited by the small sample size within groups. Unplanned exploratory analyses presented in Appendix 3c offers some tentative support for the specificity of an indirect pathway between role-confusion and OC symptoms via inflated responsibility which was not found for anxiety or depressive symptoms. However, this was generated through a whole group analysis and the sample size was too small to permit between group comparisons of this model. Although a larger sample would have been preferable, current numbers are not considerably different from similar research in the area (e.g.  $N=59$ ; Barrett & Healy, 2003;  $N = 25$  per group; Ivarsson et al., 2010;  $N = 28$  per clinical group; Libby et al., 2004). Future research would

benefit from larger samples to permit more complex between-group comparisons in order to advance understanding of how these variables may uniquely contribute to a greater understanding of the etiology of OCD.

Data was cross sectional limiting conclusions that can be drawn regarding temporal causality. Although findings point to the predictive nature of infant attachment to adolescent/ adult attachment (Lyons-Ruth & Jacobvitz, 2008), it has been recognised that in the absence of longitudinal data, the behaviours coded using the GPACS may represent ‘deviations in parent-adolescent interaction’ (p.384; Obsuth, Hennighausen, Brumariu, & Lyons-Ruth, 2014), and that findings may be indicative of reciprocal relationships between role-confusion and OCD and the possibility that OCD symptoms may wholly or partly affect the parent-child interaction. A longitudinal design would provide greater confidence in the stability and predictive nature of these attachment-related behaviours. Related to this point, this measure of attachment did not yield homogeneity of variance. This may be a product of the scale having a limited range of scoring as it was designed to categorise adolescent attachment stances. The violation was statistically corrected but its presence may limit the confidence with which findings can be interpreted.

***Future Directions:*** These limitations notwithstanding this study does build on current literature and identifies areas for future research and clinical work in several ways. This was the first study to examine ERS using an OCD specific measure in an adolescent sample. Findings partially support those drawn from the adult literature but further research is required with a broader child sample to (dis)confirm the lack of specificity between clinical groups in the current study.

Secondly, the majority of studies currently employing the GPACS work with an older adolescent sample (e.g. Brumariu et al., 2013; Obsuth et al., 2014; Vulliez-Coady et al., 2013) so this study provides some evidence for the applicability of this observational measure with younger participants. This finding adds to the emerging body of evidence that distinct patterns of attachment-related behaviours may account for variation in anxiety disorders among adolescents (Brumariu et al., 2013) but further research with a younger adolescent sample is required to support this.

The findings of this study may have implications for the treatment of OCD and other anxiety disorders in adolescents. The presence of a heightened level of role confusion in the clinical samples suggests that there may be particular attachment needs that need attending to, to reduce the vulnerability and/or maintenance of the disorder. In line with emerging literature surrounding reassurance provision, this may suggest that offering

support rather than reassurance, quality time with the caregiver and a degree of mentalising, through labelling the emotion, rather than providing practical responses to requests (e.g. Halldorsson, 2015; Piacentini & Langle, 2004; Rachman, 2002) will be required to meet such attachment needs. Future research should seek to explore these relationships within an adolescent sample and monitor the impact of targeting attachment needs as an intervention.

In summary, the current study builds upon the limited body of evidence that tests the cognitive model of OCD with an adolescent sample. It also adds to the literature highlighting the importance of considering the impact of disrupted patterns of attachment. Findings imply that there may be less specificity between adolescents with OCD and anxiety disorders than identified within adult samples. However, there is some evidence to suggest that role-confusion in the parent-adolescent relationship may be a fruitful area to target in order to treat core cognitive and behavioural components which maintain the disorder. Further research is required to explore symptom subtype differentiation in an effort to contribute to the understanding of the specific developmental trajectory of core features of OCD.

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## **Executive Summary**

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## Executive Summary

**Background:** Obsessive compulsive disorder (OCD) is a common problem for children and adolescents. Sufferers of OCD experience distressing thoughts or images that pop into their mind that are unwanted. These thoughts are typically related to harm coming to themselves or others through illness, theft or fire. One explanation of why this happens is that people with OCD believe that they are responsible for causing this harm and find these thoughts unbearable to have. This leads them to do things that they think will transfer responsibility and to reduce the likelihood of harm occurring. This can take the form of compulsively checking for signs of danger and repeatedly asking for reassurance from others that they have not caused harm. Much of what is understood about OCD is taken from research with adults and little is known about how well this explains how OCD develops in young people.

The current study aimed to find out more about OCD in young people by looking at whether there is a difference in the beliefs and behaviours of responsibility for harm and seeking reassurance from others, in adolescents with OCD compared to adolescents with and without anxiety problems. This study also wanted to find out how OCD beliefs and behaviours develop in young people and whether there is a difference between young people with and without OCD in their attachment relationships to their parents.

**Method:** The present study recruited 57 adolescents aged 11-18 and their parents. Nineteen adolescents had a diagnosis of OCD, 19 had a primary diagnosis of an anxiety disorder other than OCD and 19 were recruited from the community and had no problems with anxiety. Parents and adolescents completed self-report questionnaires rating their mental health, obsessive compulsive symptoms, anxiety symptoms and depressive symptoms. They also rated how much they experienced OCD symptoms, including beliefs about responsibility and reassurance seeking behaviours. They then discussed a topic of mild conflict about a common difficulty for parents and adolescents, such as bedtime or chores. The discussion was filmed and behaviours related to attachment were identified.

**Results:** Findings showed that adolescents with anxiety problems and OCD had more OCD symptoms and attachment difficulties compared to adolescents without anxiety problems. However, there wasn't as much of a difference as expected between adolescents with OCD and adolescents with anxiety in terms of responsibility beliefs, reassurance seeking behaviour and attachment. Findings also show that parents of children with anxiety and OCD may be less responsive to their adolescent's emotional needs and adolescents

may be less able to assert their opinion, partly because they are worried about how their parents will react. Results suggest that more research is needed with adolescents who have OCD to find out whether there is a link between attachment and OCD beliefs and behaviours.

**Conclusions:** This study helps us to understand more about the development of OCD with young people and how it may be different to adults. It is clear that adolescents with anxiety problems and OCD have more attachment difficulties, experience stronger beliefs about responsibility and need to seek more reassurance than adolescents with no symptoms of anxiety. However, more research is needed to find out whether there are differences between anxious adolescents and those with OCD in terms of OCD specific beliefs and behaviours, as found with adults.

## **Connecting Narrative**

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## **Connecting Narrative: Reflections on the Process of Conducting Clinical Research as Part of the Doctorate**

I entered the process of completing the doctorate feeling fairly confident with research skills having recently completed a masters and PhD. However, I quickly realised that clinical research is very different to community-based research and conducting research as part of clinical training rather than it being the whole focus of the course was much more challenging than anticipated.

### **Study Selection and Development:**

Generating ideas for the three main research projects; literature review, service improvement project (SIP) and main research project (MRP), was my favourite, and least challenging part of the process. I have always felt that my strengths lie more in the idea generation than the fine tuning aspect of study design. I enjoy reading papers, attending conferences or learning about new theories and spotting potential areas that require further investigation or would translate well into an interesting research question. This was how I generated the initial ideas for all three of my projects and have managed to see each idea through to study completion.

*Main research project:* The idea generation for this project initially came from attending a lecture about hypochondriasis in which the presentation of excessive reassurance seeking (ERS) sounded like an attachment behaviour. Through collaboration with Professor Salkovskis and exploration of the literature, we shaped the idea into exploring attachment and ERS in young people with OCD. The decision was taken to explore OCD rather than hypochondriasis due to my interest in working with young people and lower prevalence rates of hypochondriasis in adolescents compared to adults. Also, upon investigation, it transpired that there is existing research into ERS and attachment in hypochondriasis among adult samples but a gap in this relationship within the OCD literature, confirming the appropriateness of the research question. Once this was confirmed study development was relatively straight forward with a combination of reviewing relevant literature and regular meetings with all supervisors to collaboratively decide upon the sample, measures and statistical analysis. Study design did not undergo any change from conception to completion.

*Service Improvement Project:* generation and development of the SIP and Literature Review ideas were slightly less straightforward due to difficulty deciding which topic to use for which project. I had an interest in the use of CBT with young people with

autism due to clinically informed experiences suggesting that it could be both a difficult and effective form of therapy for this client group. I also had a general interest in psychosis with more specific interests in the areas of trauma and attachment in the onset and maintenance of symptoms. Again through exploring the literature, and several collaborative meetings with the project supervisors, we developed the ideas settling on trauma and psychosis as a theme for the SIP.

Through review of empirical and theoretical studies combined with the clinical expertise of Lorna Hogg and Dr Gillmore, the project supervisors, we identified the gap between research and practice in considering the role of trauma in the onset of psychotic symptoms. To meet the specification of a service improvement model we planned to complete focus groups with staff and service users to gather information of their needs and to use this to adapt a training program Dr Gillmore was already delivering within the Trust. Feedback on the proposal suggested this was too ambitious for a SIP and so the final project worked with staff only, exploring their views and needs in this area and delivering and evaluating a training package to meet these needs.

*Literature Review:* The decision was reached to explore the use of CBT with young people with autism spectrum disorders and co-morbid mental health disorders. It was recognised that the literature informing the NICE guideline was based largely on anxiety only despite evidence indicating increased prevalence rates of all mental health disorders commonly seen in CAMHS settings among this population. As such, I wanted to explore research with anxiety disorders as well as any studies using CBT with a young population with ASDs and comorbid mental ill health. Through collaboration with my initial supervisor, Dr Adams, we developed a more clinically relevant question which could be answered by a systematic literature review; to explore the modifications required to make CBT an accessible intervention for this population.

This question underwent several refinements through literature searches illustrating the lack of empirical research in areas other than anxiety. Completions of drafts and the process of collating and interpreting findings as well as the invaluable suggestions of the project supervisors Dr Loades and Dr Russell all contributed to the final content and structure of the review.

### **Ethical Approval**

Obtaining ethical approval was a task that was very new to me as I had only previously applied for university ethics. I was not aware of, or prepared for, the experience of liaising with external research ethics committees and trust Research and Development

(R&D) offices. It was something I very much learned through doing as each project and committee required something slightly different meaning there were no specific guidelines available. I found the process highly anxiety provoking, particularly the co-ordination involved in collecting electronic signatures from very busy people and submitting all documents required within the time frame permitted after booking the meeting. My naivety in conducting clinical research and misplaced optimism at how straight forward it would be resulted in me underestimating the time required to collect data so I had to request a minor amendment to the proposal. I also had to undergo the process a second time as I had to add sites in Wales, which were governed by a different ethics committee, due to problems in the Trust limiting the number of referrals to the study. All of these processes took time and were never as straightforward as anticipated.

The SIP ethical approval was slightly easier only involving university and R&D ethical approval due to not being classed as research and not involving service users. However, even this process involved a debate about whether the project did count as research or audit and whether additional training would be required prior to approval finally being granted.

On reflection, although this was a very stressful experience, I do feel that I have developed very useful skills through being the Chief Investigator on a project and having to be responsible for completing these tasks. While I do not relish the prospect of having to complete this process again in the future, I do feel more informed about the stages involved, how long each stage can take and the skills needed to negotiate with busy clinicians and REC members to meet each particular deadline. This will, if nothing else, help me to manage the necessary time that must be dedicated to ethical applications, reducing the stress associated with this process.

## **Recruitment**

Recruitment for the SIP was fairly straight forward, largely as a result of the course determining that it could only involve staff members. The EI time was very motivated and keen to participate, they had a supportive manager at the time of the initial data collection and the regional supervisor was also part of the team, playing an instrumental role in following up with his colleagues to collect the final questionnaires.

Recruitment for the MRP has involved a steep learning curve. It was initially suggested that aiming for 22 young people and parents per group was ambitious, and I

didn't quite manage to reach these numbers. Difficulties encountered included relying on busy clinicians to hold my study in mind in order to identify and refer appropriate clients as well as trust wide difficulties resulting in a fewer number of clients with anxiety disorders being accepted into the service. Additional difficulties included anxious parents who either declined to participate for fear of making symptoms return or who agreed to participate initially but then could not find a good time, repeatedly cancelled appointments or just did not arrive. Surprisingly this was a pattern observed in the clinical sample and the healthy control group. I overcame some of these difficulties by taking the time to meet with clinicians and broadening the research pool from which to recruit participants but now recognise how helpful it would have been to prepare for these challenges when designing the study.

*Data Collection:* Balancing data collection alongside completing placement and attending teaching, particularly when it involved completing home visits which invariably take longer than clinic-based appointments, was testing. Some placement supervisors were more supportive than others at allowing time for data collection which meant that there were times when weeks would go past with no data collection, which was incredibly stressful. The experience of having to tolerate uncertainty associated with working to a colleagues' time scale rather than being in total control of managing time has been challenging but I feel that the experience will ultimately support me to be more able to effectively manage the demands of a busy clinician. In particular, this process has helped me to become more efficient with small chunks of time and to compartmentalise tasks allowing me to focus completely on any one activity for the time available only, but then switching attention when needed.

### **Writing up**

While I am comfortable with writing extended pieces of written academic work the process of completing it alongside all other responsibilities of the course has been trying. It has felt as though there has been such limited time to dedicate to writing resulting in a sense that work is not of a high enough standard. In general there has also been fewer opportunities to have drafts reviewed than I experienced during completion of my PhD thesis. While this has resulted in a degree of uncertainty about the quality of work it has led to increased self-reliance in which I am learning to appraise and critique my own work; skills which I think will be invaluable moving forward from training to be an autonomous clinical researcher.

## **Contributions to Clinical Practice**

I plan to submit each of the research projects to their target journals in the hope that they may disseminate to clinicians to inform judgement about each of the respective findings. Conducting clinical research has been interesting and hugely relevant. I feel that the findings from each of the studies may be useful within the clinical field. Completing the research, in each of the three areas has informed my own clinical practice. I have followed modified CBT protocols to work effectively with young people in CAMHS with comorbid ASDs, and have completed 1:1 phase based therapy and supported the team to reformulate a client's psychotic symptoms as an outcome of complex trauma. Through completing the training in the attachment coding scheme I have used for my MRP I have developed my understanding of attachment exponentially which I feel is crucial to work therapeutically with young people and their families. I recognise the value of clinical research and see how much more relevant and accessible clinically oriented research is for clinically related issues than academic, community-based research. I hope to continue conducting clinical research and aim to find a position which will support this goal.

## **Summary**

Although the research has been difficult at times, I do feel that the process has enriched my research skills but also deepened my understanding of each of the respective areas. I recognise the importance of conducting clinical research to advance the field but also for continued professional development to ensure that I am aware of the latest findings and models and to enhance my understanding of the processes and underlying mechanisms contributing to onset and maintenance of disorders. Through the process I recognise that my strengths lie in idea generation and the areas I still need to work on include time management and building confidence in relying on my own judgment of the quality of my work. My research goals include publishing the work I have completed for this doctorate, as I did not manage to for my PhD, and finding a job role which facilitates and encourages clinical research.



## **Appendices**

### **Critical Literature Review**

- 1a. Table 4: Table of study characteristics including NOS subheadings
- 1b. Notes for authors from Journal of Autism and Developmental Disorders

### **Service Improvement Project**

- 2a. Information and Consent Forms
- 2b. Example questionnaire
- 2c. Questions forming semi-structured interview
- 2d. Thematic models of core categories; knowledge, confidence and worries around complex trauma
- 2e. Notes for authors from Psychosis

### **Main Research Project**

- 3a. Information and Consent forms
- 3b. Table of planned contrasts for representation of attachment scales
- 3c. Exploratory analysis: Individual tests of mediation by symptom grouping
- 3d. Notes for authors from Child Development

**Appendix 1a: Table of study characteristics including NOS subheadings**

Anxiety Disorders						
Study Details	Participant Selection	Comparability	Exposure (Measures)	CBT content and score	Outcome and NOS score 0 high risk of bias- 10 low risk	Modifications
<p><b>Sofronoff, Attwood &amp; Hinton (2005)</b> RCT- 3 armed intervention; child only, child and parent, waitlist. Group intervention</p> <p>71 10-12 year olds with high functioning autism</p> <p>Community based sample</p>	<p>Existing diagnosis of Asperger's verified by the CAST (Scott et al, 2002)</p> <p>Anxiety established through phone interview and measured at baseline with parent report. (1)</p> <p>Community sample recruited through newspaper and radio adverts- potential selection bias</p> <p>Random allocation of controls from same community recruited sample (1)</p> <p>No mention of history of anxiety</p>	<p>Matched at design by age and sex (1)</p>	<p>Parent report of anxiety only using Spence Child Anxiety Scale- Parent (SCAS-P; Nuata et al, 2004)</p> <p>Social Worries Questionnaire- Parent (SWQ-P; Spence, 1995)</p> <p>Child report of anxiety management James and the maths test (anxiety management; Attwood, 2002)</p> <p>Same method of assessment for all groups (1)</p> <p>No drop out across groups (1)</p>	<p>All 6 components of CBT; Psychoeducation of affect, somatic management strategies, problem solving, cognitive restructuring, home based exposure, relapse prevention (1)</p>	<p>Significant decline in parent reported anxiety and social worries from pre-treatment to FU and compared to waitlist.</p> <p>Combined parent and child group resulted in greatest improvement</p> <p>NOS score = 5 (moderate)</p>	<p><u>NICE recommended</u></p> <ul style="list-style-type: none"> <li>Brief intervention- 6 2 hour group sessions</li> <li>Structured workbooks</li> <li>Emotion recognition training</li> <li>Involving parents</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>Use of metaphors- child as scientist to encourage home exposure</li> <li>Tool box of feeling, social and thinking tools for problem solving</li> <li>Social stories for cognitive restructuring (antidote to noxious thoughts)</li> <li>Idiosyncratic rating scales of feelings and concrete strategies (fear thermometer; James and the maths test) to measure anxiety.</li> </ul>
<p><b>Chalfant, Rapee &amp; Carroll (2007)</b></p>	<p>Existing diagnosis of Asperger's or HFA confirmed through observation during interview</p> <p>Anxiety established through baseline ADIS C/P (1)</p>	<p>No significant differences between groups but treatment and control</p>	<p>Interviewer not blind to status</p> <p>Anxiety Disorders Interview Schedule for parents and</p>	<p>All 6 components of CBT but with a slightly reduced cognitive</p>	<p>Significant reduction in anxiety diagnoses over time and</p>	<p><u>NICE recommended</u></p> <ul style="list-style-type: none"> <li>More focus on concrete exercises</li> <li>Structured workbooks and visual aids</li> </ul>

<p>RCT group intervention V WL</p> <p>47 8-13 year old children HFA</p> <p>Community and clinic based sample</p> <p>Adapted version of the 'Cool Kids' program (Lyneham et al, 2003)</p>	<p>Mix of community, medical and self-referral (1)</p> <p>Random allocation of controls from sample (1)</p> <p>No mention of history of anxiety</p>	<p>were not matched in study design</p>	<p>child (ADIS-C/P; Albano &amp; Silverman, 1996)</p> <p>Child and Parent report Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds &amp; Richmond, 1978)</p> <p>SCAS; Spence, 1998; SCAS-P; Nuata et al, 2004</p> <p>Same measures used for treatment an waitlist participants (1)</p> <p>4 dropouts from treatment not reported from WL</p>	<p>restructuring component. (1)</p>	<p>compared to waitlist <math>\eta^2 = .59</math></p> <p>Significant reduction in self-reported anxiety over time and compared to waitlist (RCMAS <math>\eta^2 = .61</math>; SCAS <math>\eta^2 = .53</math>)</p> <p>And in parent reported anxiety (SCAS-P <math>\eta^2 = .54</math>)</p> <p>NOS score = 4 (moderate)</p>	<ul style="list-style-type: none"> <li>Emotion recognition training</li> <li>Simplified cognitive component choosing restructuring ideas from lists</li> <li>Parent involvement</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>12 sessions Administered over 6 months with booster sessions to aid learning</li> <li>Inclusion of large component of relaxation strategies</li> <li>Parent program teaching management strategies and psychoed</li> </ul>
<p><b>Reaven et al (2009)</b></p> <p>33 children aged 7-14</p> <p>Group intervention v WL</p> <p>Original manual for ASD</p> <p>Community based sample</p>	<p>Existing ASD diagnosis confirmed with ADOS and social communication questionnaire and Kiddie Schedule for Affective Disorders (Kauffman et al, 1997) used to screen for anxiety (1)</p> <p>Wide range of referral sites (clinic, parents support groups, workshops, seminars and schools) good representation (1)</p> <p>Same method of recruitment for sample and allocated to group based on order of entry to study (1)</p>	<p>No significant differences on descriptives but not matched in design</p>	<p>Parent and Child Screen for Child Anxiety and Related Emotional Disorders (SCARED; Birmaher et al, 1999) used to rate anxiety</p> <p>SCARED completed by both groups (1)</p> <p>2 families dropped out of treatment not reported for WL</p>	<p>4 components of CBT (psychoed, somatic management, cognitive restructuring, exposure) (1)</p> <p>Reduced cognitive component</p>	<p>Significant reduction in parent reported anxiety over time and compared to waitlist. Significant reduction to below the clinical cut off for CBT compared to WL</p> <p>No significant effect on child report.</p> <p>NOS score =5 (moderate)</p>	<p><u>NICE recommended</u></p> <ul style="list-style-type: none"> <li>More concrete approach</li> <li>Visual structure</li> <li>Written worksheets and multiple choice lists</li> <li>Emotion recognition training</li> <li>Simplified cognitive component including choosing coping statements rather than generating restructured cognitions</li> <li>Parental involvement</li> <li>Focus on special interests</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>Token reinforcement to promote in group behaviour</li> <li>Inclusion of large component of relaxation strategies</li> <li>Use of video modelling</li> </ul>

	Group and Controls included with history of anxiety providing medication was stable (1)					<ul style="list-style-type: none"> <li>Parent component addressing overprotective parenting</li> </ul>
<b>Wood et al (2009)</b> RCT 1:1 intervention V WL  40 7-11 year old children with autism, Asperger's or PDD-NOS  Community sample  Modified building Confidence program (Wood & McLeod, 2008)	Existing diagnosis of ASD confirmed with ADOS, ADI-R and a parent checklist  ADIS C/P used to diagnose anxiety 15% independently verified (1)  Wide range of referral sites (medical clinic, parents support groups and school inclusion specialists) good representation (1) Controls randomly allocated (1)  Group and Controls included with history of anxiety providing medication was stable and no other psychosocial treatment (1)	Matched for age and gender during block allocation to group (1)	ADIS C/P completed by independent blind evaluators (1)  MASC (Multidimensional Anxiety Scale for Children; March, 1998) completed by parents and children  Same measures used for waitlist administered by blind evaluators (1)  Equal response rate across groups (2 treatment, 1 WL) (1)	4 elements of CBT (affect recognition, cognitive restructuring, exposure and school support to limit relapse) (1)	Significantly greater reduction in clinician rated and parent reported anxiety post treatment compared to WL (Clinician effect size 2.46, parent effect size 1.23)  No significant difference on child reported anxiety  Gains maintained at 3 month F/U  NOS score = 8 (low)	<u>NICE recommended</u> <ul style="list-style-type: none"> <li>Emotion recognition training</li> <li>1:1 child then parent and child session</li> </ul> <u>Additional</u> <ul style="list-style-type: none"> <li>Focus on improving social skills</li> <li>Integrated with school to increase school-base support</li> </ul>
<b>Sung et al (2011)</b> RCT group intervention v Social Recreation program  70 young people 9-16 years old	Sample referred from clinician with existing diagnosis of ASD confirmed with the ADOS Screened using the SCAS (1)  Wide range of referral sites (child guidance clinic, paediatricians, school inclusion specialists) good representation (1)  Controls randomly allocated (1)	No significant difference in variables but not matched in design	Child report SCAS Clinician CGI-severity but not blind to status  Same measures used for both groups (1) Equal response rate across groups (3 CBT, 3 SRP) (1)	5 elements of CBT (psychoed., somatic management, cognitive restructuring, problem solving exposure) (1)  SR-social skills taught and	Both groups showed significant reductions on child reported GAD ( $\eta^2 = .06$ ) and total anxiety ( $\eta^2 = .06$ ) at 6 month FU. SR group also reported significantly	<u>NICE recommended</u> <ul style="list-style-type: none"> <li>Structured worksheets</li> <li>Emotion recognition training</li> <li>Visual aids</li> <li>Involving parents</li> <li>Concrete replacement of thinking errors with helpful thoughts</li> </ul> <u>Additional</u> <ul style="list-style-type: none"> <li>Role plays</li> <li>Social Stories</li> </ul>

<p>Clinic and community sample</p> <p>Modified Coping Cat (Kendall, 2000) and Exploring Feelings (Attwood, 2004)</p>	<p>Group and Controls included with history of anxiety providing medication was stable (1)</p>			<p>group activities of crafts and preparing meals</p>	<p>reduced anxiety post-treatment.</p> <p>45% CBT and 55% SR showed reliable clinical improvement at 6 month FU. CBT and SR were not significantly different</p> <p>NOS score = 6 (moderate)</p>	<ul style="list-style-type: none"> <li>• Acronyms for problem solving STAR</li> <li>• Use of metaphors- cleaning tools to encourage the use of cognitive restructuring</li> <li>• Relaxation strategies</li> <li>• Increased use of games and visual aids for younger children</li> </ul>
<p><b>Reaven, Blakeley-Smith, Culhae-Shelburne &amp; Hepburn (2012)</b></p> <p>50 7-14 year old children</p> <p>RCT Facing your Fears group intervention V Treatment as Usual (TAU) (psychosocial and pharmacological interventions)</p> <p>Community based sample</p>	<p>Existing diagnosis of ASD confirmed by ADOS and SCQ Anxiety confirmed with SCARED C/P and ADIS C/P (1)</p> <p>Wide range of referral sites (adverts in parent groups, schools and clinics) good representation (1)</p> <p>Controls randomly allocated following recruitment (1)</p> <p>Excluded if presence of additional mental health problems but no mention of history of anxiety</p>	<p>No significant differences but not controlled for in design or analysis</p>	<p>Independent clinical evaluators blind to condition completed the ADIS C/P (1)</p> <p>Same method of assessment for treatment and control groups (1)</p> <p>3 drop outs reported from treatment, not reported for TAU</p>	<p>4 components of CBT (psychoed, somatic management, cognitive restructuring, exposure) (1)</p>	<p>Significant reduction in clinician rated severity CBT group compared to TAU and significant reduction in GAD diagnosis for CBT compared to TAU (<math>d=.85</math>). Significantly more children in CBT attained a positive treatment response than TAU (<math>d=1.03</math>)</p> <p>Gains maintained at 6 month FU</p>	<p><u>NICE recommended</u></p> <ul style="list-style-type: none"> <li>• More concrete approach</li> <li>• Visual structure</li> <li>• Written worksheets and multiple choice lists</li> <li>• Emotion recognition training</li> <li>• Simplified cognitive component including choosing coping statements rather than generating restructured cognitions</li> <li>• Focus on special interests</li> <li>• Parental involvement</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>• Token reinforcement to promote in group behaviour</li> <li>• Inclusion of large component of relaxation strategies</li> <li>• Use of video modelling</li> <li>• Parent component addressing overprotective parenting</li> </ul>

					NOS score =5 (moderate)	
<b>McNally, Lincoln, Brown &amp; Chavira, (2013)</b> RCT 1:1 16 week manualised Coping Cat Program V WL 22 8-14 years old  Community sample	Existing diagnosis of ASD confirmed with ADOS and ADI. ADIS C/P employed to confirm anxiety diagnosis (1)  Recruited from local agencies and non-profit organisations but these are not described  Participants recruited and then allocated to treatment or WL (1)  No description of symptoms other than baseline measures	Stratified on age and IQ and pre-treatment anxiety severity in study design (2)	ADIS C/P completed by interviewers blind to condition (1) SCAS C/P  Same methods of assessment for treatment and controls (1)  No drop out in either condition (1)	5 components of CBT (psychoed, somatic management, cognitive restructuring, problem solving, exposure) (1)	Significantly reduced parent reported anxiety ( $d=1.35$ ) and marginally significantly reduced child-reported anxiety ( $d=.51$ ) in CBT group compared to WL. 58% of CBT v 0% WL no longer met criteria for primary diagnosis post intervention  Gains maintained at 2 month FU  NOS score =7 (low)	<u>NICE recommended</u> <ul style="list-style-type: none"> <li>Written and visual materials using concrete language.</li> <li>Incorporating special interests</li> <li>Emotion recognition training</li> <li>Increased focus on concrete exposure</li> <li>Movement breaks</li> </ul> <u>Additional</u> <ul style="list-style-type: none"> <li>Longer sessions to offer matched pace (60-90 minutes)</li> <li>Post session re-cap to revise session content</li> <li>Role plays</li> <li>Focus on relaxation</li> </ul>
<b>Storch et al (2013)</b> RCT 1:1 Behavioural Interventions for Anxiety in Children with Autism (BIACA) v TAU	Existing diagnosis of ASD confirmed with ADOS and ADI. Anxiety diagnosis confirmed with ADIS C/P and Paediatric Anxiety Rating Scale (PARS; RUPP, 2002) (1)  Referrals, advertisements and patient flow through a university mental health clinic-representative of clinic sample only (1)	No significant differences on demographics but not matched in design or analysis	ADIS C/P and PARS completed by independent evaluators blind to condition (1) RCMAS  Same method of assessment for treatment and control group (1)  Different drop-out rates (7 CBT v 0 TAU)	3 components of CBT (somatic management, problem solving, exposure)  Predominantly behavioural and concrete in approach	29% reduction in clinician rated anxiety post intervention compared to 9% TAU ( $d=1.03$ ) Significantly more treatment responders in the intervention group (75% compared to	<u>NICE recommended</u> <ul style="list-style-type: none"> <li>Increased focus on structured behavioural exposure</li> <li>Incorporating special interests</li> <li>Involving parents</li> </ul> <u>Additional</u> <ul style="list-style-type: none"> <li>Token reinforcement</li> <li>Relaxation strategies</li> <li>Social skills training</li> </ul>

<p>45 7-11 year old children</p> <p>Clinic based sample</p>	<p>Participants equally recruited then allocated to CBT v TAU (1)</p> <p>Existing anxiety disorders included as long as medication was stable (1)</p>				<p>14% TAU; <math>d = 1.59</math>)</p> <p>Significantly more young people achieved remission in the intervention group (38% compared to Tau (5% <math>d = 1.37</math>))</p> <p>Significantly declined Child reported anxious arousal in CBT V TAU</p> <p>Gains were maintained at 3 month F/U</p> <p>NOS score = 6 (moderate)</p>	<ul style="list-style-type: none"> <li>Parent component teaching parenting skills and supporting facilitation of home practice</li> </ul>
<p><b>Fujii et al (2013)</b></p> <p>12 7-11 year old children 1:1 modified building Confidence program v TAU</p> <p>Community sample</p>	<p>Existing ASD diagnosis confirmed by ADOS and ADI. Anxiety diagnosis confirmed with ADIS C/P (1)</p> <p>Wide recruitment all participants referred by professionals from autism clinics, centres, parents support groups and schools (1)</p> <p>Participants equally recruited then allocated to CBT v TAU (1)</p> <p>Existing anxiety disorders included as long as medication was stable (1)</p>	<p>Block randomisation to treatment or TAU, matched on age and gender (1)</p>	<p>ADIS- C/P completed by independent assessors blind to treatment condition (1)</p> <p>Same method of assessment for treatment and controls (1)</p> <p>Different rate of drop out 3 CBT 1 TAU</p>	<p>3 components of CBT (problem solving, cognitive restructuring using Socratic Questioning and exposure)</p>	<p>71% of children in the intervention group no longer met criteria compared to 0% in the TAU group</p> <p>Significantly lower clinician rated severity for CBT than TAU post intervention</p> <p>NOS score = 7 (low)</p>	<p><u>NICE recommended</u></p> <ul style="list-style-type: none"> <li>Emotion recognition training</li> <li>1:1 child then parent and child session</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>Longer program of therapy 32 sessions</li> <li>Focus on improving social skills</li> <li>Integrated with school to increase school-base support</li> <li>Parent component</li> </ul>

<b>Wood et al, (2015)</b> RCT 1:1 modified BIACA v WL  33 11-15 year old adolescents  Community sample	Existing ASD diagnosis confirmed with ADOS and ADI and anxiety diagnosis confirmed with the ADIS and PARS (1)  Self-referral through research sites only so potential for bias  Participants recruited then allocated to CBT or WL (1)  Existing anxiety disorders included as long as medication was stable and no psychosocial intervention administered (1)	Block randomisation to treatment or TAU, matched on age and gender and base line anxiety measures (2)	ADIS C/P and PARS completed by independent assessors blind to treatment condition (1)  Same method of assessment for treatment and WL (1)  Same drop-out rate of 3 per group (1)	5 components of CBT (psychoed, somatic management, problem solving, cognitive restructuring, exposure) (1)	Significant effect of intervention on the clinician reported anxiety symptoms ( $d = .74$ ) Significantly more treatment responders CBT (79%) V waitlist (28.6%)  32% intervention compared to 21% waitlist no longer met criteria for their primary anxiety diagnosis post intervention  Child reported anxiety symptoms not significantly different to waitlist  Gains maintained at 1 month FU  NOS score =8 (low)	<u>NICE recommended</u> <ul style="list-style-type: none"> <li>Increased focus on structured behavioural exposure</li> <li>Incorporating special interests</li> <li>Involving parents</li> </ul> <u>Additional</u> <ul style="list-style-type: none"> <li>Use of acronym KICK to encourage cognitive restructuring</li> <li>Token reinforcement</li> <li>Relaxation strategies</li> <li>Social skills training</li> <li>Parent component teaching parenting skills and supporting facilitation of home practice</li> </ul>
<b>Obsessive Compulsive Disorder</b>						
<b>Russell et al (2013)</b>	Existing diagnosis of ASD confirmed with ADOS and ADI OCD diagnosis confirmed with Y-BOCS (1)	Base level symptom severity	Assessors completed Yale-Brown Obsessive Compulsive Scale (YBOCS; Goodman et al, 1989)	Exposure and Response prevention with an average of	CBT was significantly effective although not more so than	<u>NICE recommended</u> <ul style="list-style-type: none"> <li>Emotion recognition training</li> <li>Increased focus on structure</li> </ul>



<p>RCT 1:1 vs anxiety management 46 14-65 year olds Largely ERP approach including cognitive components AM included psychoed and relaxation</p> <p>Clinic sample</p>	<p>Representative of clinical sample recruited from OCD clinics paediatric clinics and mental health services (1)</p> <p>All recruited in the same way then randomly allocated to CBT or AM (1)</p> <p>History of OCD established in both groups (1)</p>	<p>controlled for in analysis (1)</p>	<p>Clinical Global Impression Scale (CGI; Guy, 1976) blind to treatment condition (1)</p> <p>All participants completed the YBOCS (1)</p> <p>Same rate of Discontinued intervention 2 CBT and 3 AM (1)</p>	<p>2.7 sessions employing cognitive elements of psychoed, problem solving or cognitive restructuring (1)</p>	<p>AM on overall Y-BOCS reductions. (<math>d = .40</math>).</p> <p>CGI ratings indicated higher number of treatment responders for CBT compared to AM but these were not significantly different (<math>d = .30</math>).</p> <p>CBT continued improvement between 1- 12 month FU NOS score = 8 (low)</p>	<ul style="list-style-type: none"> <li>• Simplified cognitive component replaced with behavioural exposure</li> <li>• Incorporating special interests</li> <li>• Use of visual tools</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>• Up to 20 sessions to permit a longer assessment period</li> <li>• Standard treatment approach for OCD employed intervention predominantly focused on ERP using a graded hierarchy and home practices</li> </ul>
<b>Depression</b>						
<p><b>McGillivray &amp; Evert (2014)</b> Think well, feel well and be well group versus wait list control, non-random allocation</p> <p>32 15-25 year old males (23) and females (9)</p>	<p>Diagnosis of ASD verified by a psychologist and depression confirmed with the DASS</p> <p>Advertisement through community organisations – potential for bias</p> <p>Same population allocated to WL (1)</p> <p>History of depression assessed and incded in both groups (1)</p>	<p>No significant difference in demographics but not matched in design or analysis.</p>	<p>Self-report completion of Depression Anxiety Stress Scales (DASS; Lovibond &amp; Lovibond, 1995) and Automatic Thoughts Questionnaire (ATQ; Hollon &amp; Kendall, 1980)</p> <p>Same method of assessment for both groups (1)</p> <p>Drop outs during intervention not described</p>	<p>4 components of CBT (psychoed, somatic management, strong cognitive restructuring, problem solving)</p> <p>No exposure and minimal behavioural elements</p>	<p>Overall reduction in depression over time but no effect of intervention for whole group (<math>\eta^2 = .06</math>)</p> <p>Clinically depressed participants reported significantly reduced depression (<math>\eta^2</math></p>	<p><u>NICE recommended</u></p> <ul style="list-style-type: none"> <li>• Emotion recognition training</li> </ul> <p><u>Additional</u></p> <ul style="list-style-type: none"> <li>• Shorter program (9 weeks)</li> <li>• Strong emphasis on challenging negative thoughts</li> <li>• Introduction of thought records</li> <li>• Mindfulness rather than relaxation</li> <li>• Less of a behavioural emphasis consistent with cognitive not behavioural activation intervention</li> </ul>

					<p>=.15) but no significant improvement in ATQ compared to WL  60% made substantial improvements compared to 20% of the wait list for depression;  Gains maintained at 9 month F/U</p> <p>NOS score =3  (high)</p>	<ul style="list-style-type: none"> <li>• Strategies to manage the 'internal critic' through thought catching and replacing</li> <li>• Teaching links between behaviour and mood</li> <li>• Improving social resources</li> </ul>
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## **Appendix 1b: Notes for authors, Journal of Autism and Developmental Disorders**

All JADD manuscripts should be submitted to Editorial Manager in 12-point Times New Roman with standard 1-inch borders around the margins.

APA Style: Text must be double-spaced; APA Publication Manual standards must be followed.

As of January 20, 2011, the Journal has moved to a double-blind review process.

Therefore, when submitting a new manuscript, DO NOT include any of your personal information (e.g., name, affiliation) anywhere within the manuscript. When you are ready to submit a manuscript to JADD, please be sure to upload these 3 separate files to the Editorial Manager site to ensure timely processing and review of your paper:

A title page with the running head, manuscript title, and complete author information.

Followed by (page break) the Abstract page with keywords and the corresponding author e-mail information.

The blinded manuscript containing no author information (no name, no affiliation, and so forth).

### **The Author Note**

#### **Types of papers**

Articles, Brief Reports, Letters to the Editor, Commentaries

The preferred article length is 20-23 double-spaced manuscript pages long (not including title page, abstract, tables, figures, addendums, etc.) Manuscripts of 40 double-spaced pages (references, tables and figures counted as pages) have been published. The reviewers or the editor for your review will advise you if a longer submission must be shortened.

Special Issue Article: The Guest Editor may dictate the article length; maximum pages allowed will be based on the issue's page allotment.

A Brief Report: About 8 double-spaced pages with shorter references and fewer tables/figures. May not meet the demands of scientific rigor required of a JADD article – can be preliminary findings.

A Letter to the Editor is 6 or less double spaced pages with shorter references, tables and figures.

Style sheet for Letter to the Editor:

A title page with the running head, manuscript title, and complete author information including corresponding author e-mail information

The blinded manuscript containing no author information (no name, no affiliation, and so forth):-

- 6 or less double spaced pages with shorter references, tables and figures
- Line 1: "Letter to the Editor"
- Line 3: begin title (note: for "Case Reports start with "Case Report: Title")
- Line 6: Text begins; references and tables, figure caption sheet, and figures may follow (page break between each and see format rules)

Review your manuscript for these elements

#### **1. Order of manuscript pages**

Title Page with all Author Contact Information & Abstract with keywords and the corresponding author e-mail information.

Blinded Manuscript without contact information and blinded Abstract, and References

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

## Permissions

Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright owner(s) for both the print and online format and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to originate from the authors.

## Online Submission

Please follow the hyperlink “Submit online” on the right and upload all of your manuscript files following the instructions given on the screen.

### Title page

The title page should include:

The name(s) of the author(s)

A concise and informative title

The affiliation(s) and address(es) of the author(s)

The e-mail address, telephone and fax numbers of the corresponding author

## Abstract

Please provide an abstract of 120 words or less. The abstract should not contain any undefined abbreviations or unspecified references.

## Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

## Text

### Text Formatting

Manuscripts should be submitted in Word.

Use a normal, plain font (e.g., 10-point Times Roman) for text.

Use italics for emphasis.

Use the automatic page numbering function to number the pages.

Do not use field functions.

Use tab stops or other commands for indents, not the space bar.

Use the table function, not spreadsheets, to make tables.

Use the equation editor or MathType for equations.

Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

## Headings

Please use no more than three levels of displayed headings.

### Abbreviations

Abbreviations should be defined at first mention and used consistently thereafter.

## Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data).

Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

## Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

## Body

The body of the manuscript should begin on a separate page. The manuscript page header (if used) and page number should appear in the upper right corner. Type the title of the paper centered at the top of the page, add a hard return, and then begin the text using the format noted above. The body should contain:

Introduction (The introduction has no label.)

Methods (Center the heading. Use un-centered subheadings such as: Participants, Materials, Procedure.)

Results (Center the heading.)

Discussion (Center the heading.)

## Headings

Please use no more than three levels of displayed headings.

Level 1: Centered

Level 2: Centered Italicized

Level 3: Flush left, Italicized

## Footnotes

Center the label "Footnotes" at the top of a separate page. Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data).

Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes. Type all content footnotes and copyright permission footnotes together, double-spaced, and numbered consecutively in the order they appear in the article. Indent the first line of each footnote 5-7 spaces. The number of the footnote should correspond to the number in the text. Superscript arabic numerals are used to indicate the text material being footnoted.

## **Appendix 2a: SIP information and consent forms**

### **Exploration of the Potential Benefits of Developing Trauma Assessment and Treatment Skills with an Early Intervention in Psychosis Team**

‘You are being invited to take part in a service evaluation and improvement study. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for taking the time to read it.

#### **What is the purpose of this study?**

Research has shown that many people who develop psychotic symptoms, including hallucinations and delusions, may have experienced traumatic events. Traumatic events include, but are not limited to, neglect, physical abuse (experienced or witnessed) or sexual abuse. Over the past decade there has been a movement within services to identify patients who have had traumatic experiences and offer them the opportunity to work therapeutically to understand and overcome the trauma and associated mental ill health symptoms. However, around 50% of patients who have experienced trauma wait around 10 years before disclosing it and over a quarter do not spontaneously disclose. As such it becomes the responsibility of the clinician working with the patient to ask about trauma where it is suspected to support patients to openly discuss their experiences.

The purpose of this study is to work with people in an EI team and ask them about their experiences of working with service users who have experienced traumatic events that may be affecting their presentation of symptoms. It seeks to explore whether currently, trauma is commonly asked about and treatment offered and if not what people think are the barriers to them asking. Responses are really important as they will inform the training program and support the development of skills to assess for and offer treatment for trauma to help provide an even more effective service to thoroughly support service users who have experienced trauma.

#### **What will be asked of me if I take part?**

- 1) You will first be invited to a group meeting where we can all discuss
  - The impact of trauma,
  - Any benefits of offering a service that assesses for and treats it,
  - Any disadvantages of offering this service
  - Confidence and concerns over offering this service
  - What the barriers are to offering this service at present
  - What could help to overcome these barriers

This discussion will need to be audio-recorded to allow for transcription of the data. All responses will be anonymised during transcription and the tape will be destroyed immediately after transcription.

- 2) You will then be invited to attend an afternoon’s interactive training session with the main researcher. The training will be based on the needs identified in the meeting and will involve a powerpoint presentation, interactive discussion and group exercises to practice techniques. You will be asked to complete an evaluative

questionnaire before and after the training to evaluate what you feel has been helpful/useful about the training.

- 3) Around 6 months after the training you will be invited to complete a follow-up questionnaire to consider whether anything has changed and whether there has been an opportunity to implement the training. It will also provide an opportunity to highlight things that have been difficult/not gone smoothly which can be addressed in the future.

### **Are there any risks to taking part?**

At no time during this study will you be asked to talk about any personal experiences. However, trauma can be a distressing topic so it is possible that discussing it can bring up difficult emotions or past experiences. If this happens you are welcome to leave the study and withdraw your information at any time. The researchers involved within the study will also be happy to spend time talking with you to help you identify what has been difficult and, if necessary, helping you to find appropriate support services.

### **Are there any benefits to taking part?**

There is a current move to have Complex Post Traumatic Stress Disorder (CPTSD) introduced as a relevant diagnostic category. If this happens it will influence diagnoses given to people engaging with secondary care services such as Psychological Therapies Services and Early Intervention in Psychosis services.

As a member of the EI team the benefits of taking part include:

- Having an advantage over other services who will have to complete training
- Being able to offer your clients a choice of therapy to help them move towards recovery
- Having the opportunity to shape the training you receive to meet your needs
- Developing additional skills that can help you to work with clients who understandably find it hard to trust others
- Developing a greater awareness of how to differentiate between traumatic psychosis and other similarly presenting disorders such as CPTSD or Borderline Personality Disorder.

### **Will my responses in the meeting be kept confidential?**

At no time will you be asked to disclose personal information but will be supported to do so if you wish to. All information which is provided by you during the course of the research will be kept strictly confidential. Any information you have provided will be linked to your participant number only and not your name or any other identifiable information. The recorded session will be deleted immediately following transcription and all transcribed data will be anonymised.

### **What happens to my responses after the study?**

Responses and questionnaires will be retained in a locked department within the university linked only to participant numbers for a maximum of 10 years after the study in accordance with the 1998 Data Protection Act. During this time you can withdraw from the study and request your responses. After this time all paper information will be shredded and only anonymous numerical data will be retained until the submission of the study to the university.

**What happens to the results of the study?**

Results of the first meeting will be used to inform the training. All subsequent results will be written up in a generalised, anonymous summary and given to all members who participated in the study. It is also planned that the study will be written up and submitted to an academic journal for peer review and publication.

**Who can I contact if I have questions?**

The main researcher should be the first point of call:

Email Dr Sasha Walters on [sw741@Bath.ac.uk](mailto:sw741@Bath.ac.uk)

The second researcher can also be contacted:

Email Dr Chris Gilmore on [Chris.Gillmore@awp.nhs.uk](mailto:Chris.Gillmore@awp.nhs.uk)

The Academic supervisor can also be contacted to discuss the project:

Email Lorna Hogg on [L.I.Hogg@bath.ac.uk](mailto:L.I.Hogg@bath.ac.uk)



Participant Identification Number : \_\_\_\_\_

## CONSENT FORM

**Title of Project: Exploration of the Potential Benefits of Developing Trauma**

**Assessment and Treatment Skills with an Early Intervention in  
Psychosis Team**

Name of Researchers: Dr Sasha Walters, University of Bath,

Dr Lorna Hogg, University of Bath

Dr Chris Gillmore, NHS House, Bath

**Please tick box**

1. I confirm that I have read and understand the information sheet dated .....19/08/13.....  
for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any  
time without giving any reason, without my medical care or legal rights being affected. ☐
3. I give permission for the information I provide to be stored securely at the University of  
Bath for the duration of 10 years after the study is completed. ☐
4. I agree to the researcher using information provided to be reported as a study and I  
understand that all data written or otherwise will be made anonymous. ☐
5. I give consent for my participation in the focus group to be audio recorded and I  
understand that the data will be transcribed in an anonymised fashion and then audio  
recorded data will be immediately deleted. ☐
6. I understand that to evaluate the results, data collected during the study may be looked at  
by researchers from The University of Bath. Such monitoring would only be carried out by  
individuals who have a duty of confidentiality. I give permission for these individuals to  
have access to my anonymous data in the unlikely event that this is required. ☐
7. I agree to take part in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Researcher	Date	Signature

1 copy for participant; 1 copy for researcher;

## Appendix 2b: Example of Questionnaire (pre-training version)

Participant Identification Number : \_\_\_\_\_

### Pre Training Questionnaire

Following a focus group you agreed to participate in a training session exploring links between traumatic experiences (characterised by physical abuse (witnessed or received), sexual abuse and neglect) and psychotic symptoms. The training has been developed in response to your feedback and its aim is to provide tools and support to assist clinicians within the EI team to assess and provide phase 1 treatment for clients with traumatic experiences. To assess base-line perceptions of this area and support evaluation of the training, please could you take the time to read and complete the following questions. Please answer as honestly as possible to provide thorough evaluation.

To your knowledge, roughly how many clients on your caseload have a history of trauma?

☐ 0-5      ☐ 6-10   ☐ 11-15      ☐ 16-20      ☐ Over 20      ☐ Don't know

To your knowledge, roughly how many clients on your caseload have you enquired about traumatic experiences?

☐ 0-5      ☐ 6-10   ☐ 11-15      ☐ 16-20      ☐ Over 20      ☐ Don't know

With roughly how many clients on your caseload are you directly working with their traumatic experiences?

☐ 0-5      ☐ 6-10   ☐ 11-15      ☐ 16-20      ☐ Over 20      ☐ Don't know

Please indicate your impressions of your knowledge and confidence of the following items:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I know about links between trauma and Psychotic symptoms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I would know how to recognise signs of trauma in a client.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. If I suspected trauma may be linked to symptoms I would know how to ask about them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4. If a client's referral indicated trauma I would feel confident to ask about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. I am confident that I could identify a Complex PTSD presentation in clients with psychotic symptoms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I often feel anxious to ask about trauma in case I upset the client.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I am worried about asking about trauma in case I can't deal with it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Feeling traumatised by the traumatic experiences patients discuss (vicarious traumatisation) worries me about working with trauma.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I worry about opening up a can of worms and not knowing how to contain it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I worry I could make someone worse by asking about their trauma experiences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. My worries stop me asking about trauma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. If a client disclosed a traumatic experience I would feel confident to offer them Phase 1 grounding work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I feel confident that I could complete a course of phase 1 therapy with a client	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I worry if I started grounding work I would not know enough to complete it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I worry that I would not know when was a good time to transition into phase 2 work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. If I completed phase 1 work I would feel confident to signpost for phase 2 reliving work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I feel confident that I could manage ending therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I'm unsure my service would support me to do trauma work with EI clients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I'm unsure that I would have enough support or supervision to work with trauma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Overall how confident do you feel to carry out trauma assessment?

Extremely	Very	Neutral	Not Very	Not at all
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Overall how confident do you feel to carry out phase 1 work?

Extremely	Very	Neutral	Not Very	Not at all
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Overall how confident do you feel about recognising trauma as the primary problem at the initial assessment stage and referring to another service for treatment prior to entering the EI caseload?

Extremely	Very	Neutral	Not Very	Not at all
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. What are your personal barriers to asking about trauma with your clients?

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24. What would help you to feel more confident in this area of work?

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25. Any other comments?

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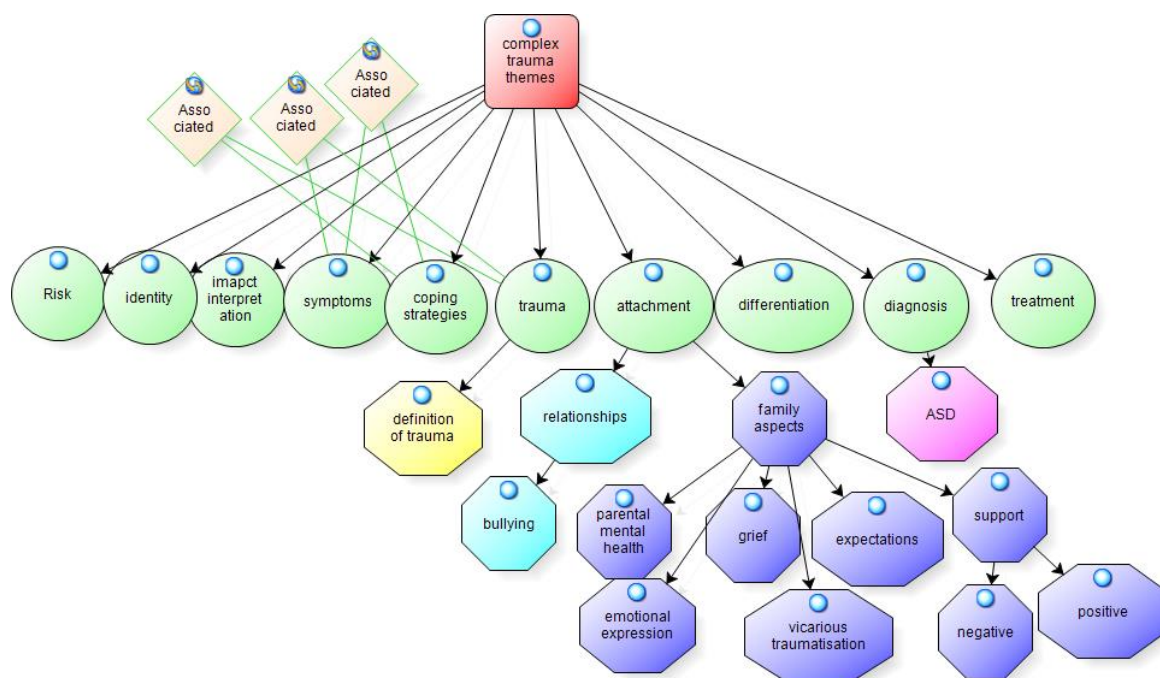
**THANK YOU VERY MUCH FOR YOUR PARTICIPATION!**

**Appendix 2c: Questions forming semi-structured interview**

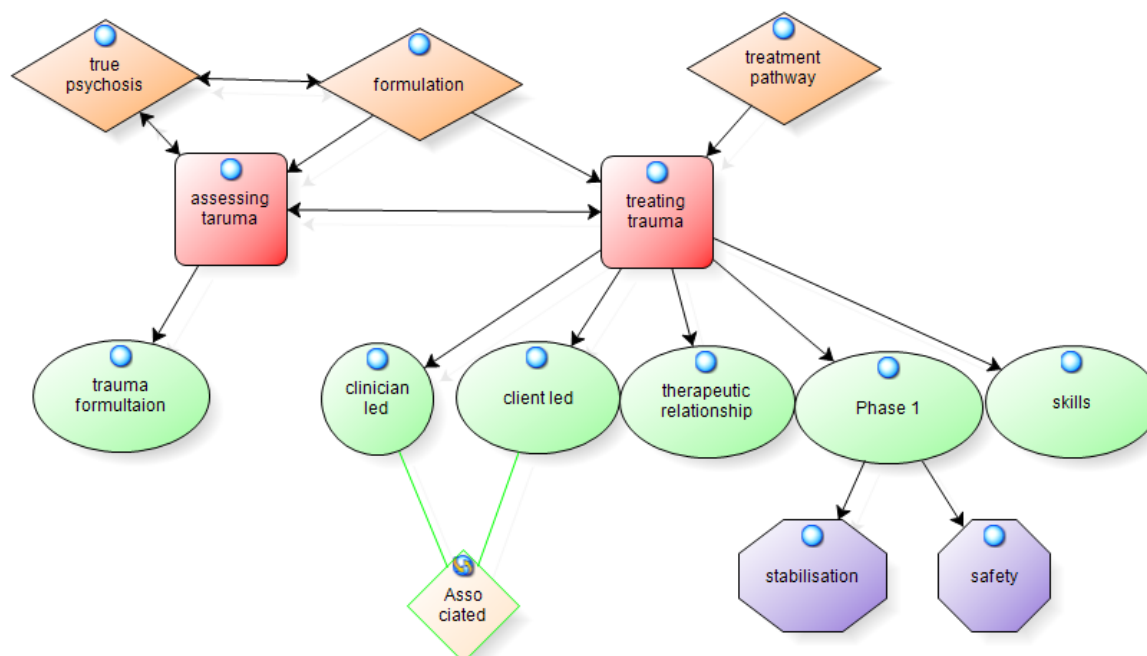
- a) Thinking of those clients, what were the kinds of experiences that might lead us to think about complex trauma?
- b) Are you currently using any standard ways of working with trauma?
- c) Do you have any worries about working with trauma or challenges to working with trauma?
- d) What do you feel would help to alleviate those worries or challenges?
- e) What structure would you like the training to take, i.e. powerpoint, interactive, role play, case presentation? Would you prefer more focus on theory or practical application or equal amounts of both?

## Appendix 2d: Figures depicting thematic models of core categories; knowledge, confidence and worries around complex trauma

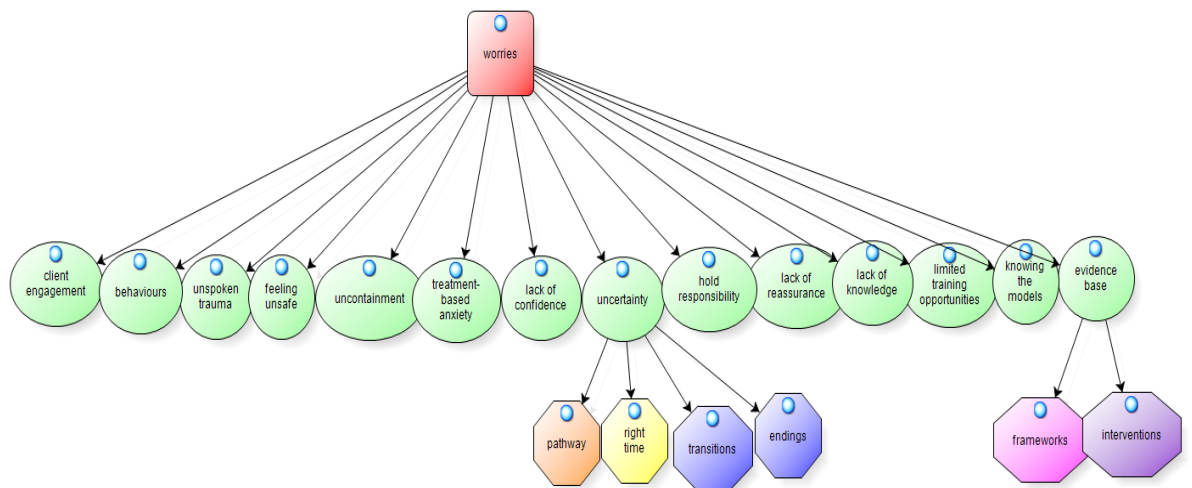
### Knowledge



### Confidence



## Worries



## **Appendix 2e: Notes for Authors, Psychosis: Psychological, Social and Integrative approaches**

### **Psychosis: Psychological, Social and Integrative Approaches**

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Contributions to *Psychosis*, whether research papers, reviews, or first person accounts (from service users or therapists), will be subjected to peer review by referees at the discretion of the [Editorial Office](#).

#### **Manuscript preparation**

##### **1. General guidelines**

Manuscripts should be consistent with the Aims and Scope of the journal.

Papers are accepted only in English. American or British English spelling and punctuation is preferred provided usage is consistent throughout.

The following word limits apply (including the abstract, tables, figures, and references):

Research articles and reviews will not exceed 5,000 words;

First person accounts (both kinds) 3,000 words;

Brief Report - 1,000 words;

Opinion Pieces - 750 words;

Letters to Editor - 400 words;

Book Reviews - 750 words.

Please do not submit Abstracts for Letters to Editor or Book Reviews.

Submitted manuscripts should be anonymised to allow for review. A separate title page should be submitted containing the author name.

Manuscript should be assembled in the following order: main text; acknowledgements; appendixes (as appropriate); references; table(s) with caption(s) (on individual pages).

A separate [Abstracts](#) of 200 words (100 words for First person accounts and Opinion Pieces) should also be provided for review papers, research papers and brief reports.

Each paper should have up to five [keywords](#).

Section headings should be concise.

Please include, in the [Discussion section](#), a subsection subtitled [Clinical Implications](#) (or Practical Implications if you see implications beyond mental health services, eg primary prevention).

For all manuscripts non-discriminatory language is mandatory. Sexist or racist terms should not be used.

Authors must adhere to [SI units](#). Units are not italicised.



When using a word which is or is asserted to be a proprietary term or trade mark, authors must use the symbol ® or TM.

Authors are encouraged to include at least two, preferably three, potential reviewers when submitting.

Authors must not embed [equations](#) or image files within their manuscript.

Authors must not use footnotes.

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Description of the Journal's [reference style](#), [Quick guide](#). Visit [CiteRefs](#) for assistance in ensuring accurate referencing according to APA style.

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We welcome figures sent electronically, but care and attention to these guidelines are essential as importing graphics packages can often be problematic.

Please be sure that all imported scanned material is scanned at the appropriate resolution: 1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour.

Figures must be saved individually and separate to text. Please do not embed figures in the paper file.

Avoid the use of colour and tints for purely aesthetic reasons.

Figures should be produced as near to the finished size as possible.

All figures must be numbered in the order in which they appear in the paper (e.g. figure 1, figure 2). In multi-part figures, each part should be labelled (e.g. figure 1(a), figure 1(b)).

Figure captions must be saved separately, as part of the file containing the complete text of the paper, and numbered correspondingly.

The filename for the graphic should be descriptive of the graphic, e.g. Figure1, Figure2a.

Files should be saved as one of the following formats: TIFF (tagged image file format), PostScript or EPS (encapsulated PostScript), and should contain all the necessary font information and the source file of the application (e.g. CorelDraw/Mac, CorelDraw/PC).

*Please note that it is in the author's interest to provide the highest quality figure format possible. Please do not hesitate to contact our Production Department if you have any queries.*

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Generic rather than trade names of drugs should be used, although trade names may be mentioned in parentheses in the first text reference to the drug.

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A competing interest exists when your interpretation or presentation of information may be influenced by your personal or financial relationship with other people or organizations. Authors should disclose all financial and non-financial competing interests.

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#### 11. Acknowledgements

All contributors who do not meet the above criteria for authorship, should be listed in an acknowledgements section. Examples of those who might be acknowledged include those who provided general, technical, or writing assistance. Acknowledgement of funding/grants are also included in this section.

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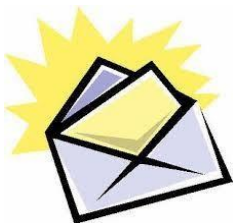
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### Thinking about young people's relationship style with their parents and reassurance seeking behaviours, when they have worries.



You are being invited to take part in a research study. This information form is designed to tell young people and their parents about this study. Before you decide if you want to take part, it is important for you to understand why the research is being done and what it will involve. Please read this form and ask us if you have any questions.

#### Why are we doing this research?

Lots of young people have anxiety or worries. A specific kind of worry is OCD or Obsessive Compulsive Disorder. OCD is common and many young people get support from a therapist to help them to try and reduce their OCD.

CBT or cognitive behavioural therapy is a helpful treatment but it doesn't work for everyone. We want to try and learn more about why some young people develop OCD to help us understand more about childhood onset OCD and why CBT isn't always helpful for all young people who have it.

When people have worries they often try to get support or reassurance from other people to stop their worries. We want to work with young people and their parent or carer, to learn more about how important reassurance is.

We think that reassurance might be particularly important during adolescence when young people are trying to figure out how to be more responsible for themselves and when relationship styles between parents and adolescents can change. Another way of thinking about relationship styles is adolescent attachment to parents. We hope to measure attachment styles as part of this project to try and understand more about the different kind of attachment styles that develop during adolescence and that might link to the need to try and get reassurance to cope with worries. Exploring whether there are any patterns of attachment styles that link with reassurance behaviours can help us to understand an important part of OCD which keeps it going which can help us to support young people who have worries.

#### Why have I been asked to take part?

Young people: To help us understand behaviours that are specific to OCD we need to work with young people who are having support for their OCD and also young people who are having support for other anxieties to see how they might be different. We need to ask 22 boys and girls aged 11-18 who have OCD and 22 boys and girls aged 11-18 who have other anxieties, to help us out with our study. You have been asked to participate because you meet these conditions and because the person you are working with thought you might be interested in taking part in the study.

Parents: An important part of this project is to measure different styles of attachment. The most widely used measure of attachment with parents and babies is an observation of how they react to each other when they have been separated. There is a new measure of attachment that measures how



adolescents and parents react to each other following a conflict or disagreement which can be thought of as an adolescents' way of testing out separating from parents. To help us measure this style of parent-adolescent attachment we need to work with the parents or carers of the 22 boys and girls with OCD and 22 boys and girls with anxieties who are interested in taking part in our study.



#### **What will I have to do?**

- The researcher will contact you to talk about the study and ask if you want to take part.
  - Young people with OCD or an anxiety disorder will be invited to come to their clinic for about 1.5 hours (and no longer than 2 hours) with their parent.
  - Young people and their parents will be asked to answer some questionnaires about thoughts and feelings to do with worries and seeking reassurance.
- Parents and adolescents will then be asked to chat about something that has been challenging or that has been argued or disagreed about recently, for between 10 and 15 minutes with the researcher in the room. This chat will be video recorded to allow the researcher to look out for different patterns of attachment styles that might be linked with different kinds of worries and ways of asking for reassurance.
- At the end of the session there will be time for you to ask any questions you have about the study.

#### **Do I need to worry about taking part?**

Young people: The questionnaires ask about worries and general thoughts and feelings. Thinking about these things could be upsetting.

Talking about something that has been disagreed about could also be upsetting or annoying.

If this happens you can stop the study if you need to. There will also be plenty of time to talk to the researcher about any difficult feelings you may have when you are taking part.



Parents: This project aims to try and understand more about any links between attachment styles and young people's ways of getting reassurance for their worries. It is possible that focussing on attachment through discussing a topic of disagreement could bring some difficult feelings to the surface.

If you do notice any difficult feelings you can decide not to take part and you can speak to the researcher at any time during the study to think about these feelings or how to cope with them.

It is also important to note that this study is not making judgements about any kind of attachment it is simply looking for any patterns that might exist. Also no individual attachment styles will be identified; instead all results will be looked at together to try and find any general or overall patterns that may help to explain links between attachment and reassurance.

**If you take part in this study, your information will not be shared with any therapists and will not affect any treatment you receive.**

**It is important to know that if it seems like any young people are in danger of harm, this information will need to be talked about, and may need to be shared with the research team.**

**Are there any benefits?**

- You will be helping us to understand more about worries, especially OCD, and how to support young people with worries and their families.
- Taking part in this study might help you to think about anxieties and relationships in a new way that could be useful to you
- Each young person will get a £5 voucher for the time taken, to spend as you like.



**Will my answers be kept confidential?**

All information you give for the study will be kept strictly confidential. All your questionnaires will have your own participant number, not your name, on them just so that you can ask for it to be taken out of the study at any time if you change your mind.

**What happens to my questionnaire after the study?**

Questionnaires will be kept in a locked department at the university linked only to participant numbers for up to 6 months after the study. Video recordings of your discussion will only be kept for scoring and will then be securely destroyed. They will never be kept with your questionnaires so your answers won't be linked to them. Questionnaires will be shredded and data will be kept anonymously in a secure computer file.

You will be given a copy of the summary of results, if you want one, after the study to see how the research can help other young people with anxieties and OCD.

**Who can I contact if I have questions?**

The main researcher should be the first point of call: Email Dr Sasha Walters on [sw741@Bath.ac.uk](mailto:sw741@Bath.ac.uk) or call 01454 862431. If she is not available to take your call please leave a message and she will return your call as soon as possible.

You can also contact the Academic Supervisor of the study: Professor Paul Salkovskis on [pms33@bath.ac.uk](mailto:pms33@bath.ac.uk)

Or the Field Supervisor who is based at CAMHS: Dr Sarah Elgie on [Sarah.Elgie@nbt.nhs.uk](mailto:Sarah.Elgie@nbt.nhs.uk)

Or look at this website for general information about clinical research <http://www.crncc.nihr.ac.uk/ppi>

Should you have any complaints during or after the study you can contact the Academic supervisor on [pms33@bath.ac.uk](mailto:pms33@bath.ac.uk) to discuss your complaints and consider next steps of action to resolve your concerns.







GIG  
CYMRU  
NHS  
WALES

Bwrdd Iechyd Prifysgol  
Hywel Dda  
University Health Board

Participant Identification Number : \_\_\_\_\_

## CONSENT FORM

**Project: Thinking about young people's relationship style with their parents and reassurance seeking behaviours, when they have worries.**

Name of Researchers: Dr Sasha Walters, University of Bath,

Professor Paul Salkovskis, University of Bath

Brynjar Halldorsson, University of Bath

Dr Sarah Elgie, NBT CAMHS

**Please tick box**

1. I have read and understood the information sheet dated 04/12/13 for the above study and have been able to ask any questions ☐
2. I understand that my participation is voluntary and that I can withdraw at any time without giving reason and without my treatment or legal rights being affected ☐
3. I give permission for the information I provide to be stored securely at the University of Bath for the duration of 10 years after the study is completed. ☐
4. I agree to have the discussion section with my parent tape recorded and understand that the recording will be deleted as soon as it has been coded ☐
5. I agree to the researcher using information provided to be reported as a study and I understand that all data written or otherwise will be made anonymous ☐
6. I understand that to evaluate research quality, data collected during the study may be looked at by researchers from the University of Bath. Such monitoring would only be completed confidentiality. I give permission for these individuals to have access to my anonymous data in the unlikely event that this is required. ☐
7. I agree to take part in the above study ☐

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

1 copy for participant; 1 copy for researcher; 1 copy to be kept  
with patient notes



**Appendix 3b: Table of planned contrasts for representation of attachment scales**

		N	Mean	SD	Clinical Vs Control
					OCD Vs Anxiety
Insecure base	control	19	2.64	.92	$t(25.47) = 4.23, p < .001$
	anxiety	19	3.50	.65	$t(34.43) = 1.45, p > .10$
	ocd	19	3.78	.52	
Lack of warmth and collaborative communication	control	19	5.21	1.81	$t(54) = 4.08, p < .001$
	anxiety	19	6.58	1.50	$t(54) = 1.50, p > .10$
	ocd	19	7.32	1.16	
Lack of mutual respect	control	19	5.37	1.95	$t(54) = 5.03, p < .001$
	anxiety	19	7.42	1.26	$t(54) = .76, p > .01$
	Ocd	19	7.79	1.18	
Hostility	control	19	3.37	1.38	$t(54) = .85, p > .10$
	anxiety	19	3.47	1.17	$t(54) = 1.0, p > .10$
	Ocd	19	3.95	1.68	
Role-confused	control	19	3.21	.98	$t(54) = 6.42, p < .001$
	anxiety	19	5.11	1.73	$t(54) = 2.13, p < .05$
	ocd	19	6.00	1.05	
Odd	control	19	2.58	.84	$t(54) = 4.50, p < .001$
	anxiety	19	4.00	1.41	$t(54) = 1.93, p > .10$
	ocd	19	4.47	1.58	

### **Appendix 3c: Individual tests of mediation by symptom grouping**

*Relationship between variables:* The cognitive model of OCD indicates that inflated responsibility is a central component to OCD symptom severity (Salkovskis, 1985) which is associated with ERS that acts as a ‘super safety-seeking behaviour’ to transfer responsibility (Salkovskis et al., 2000). ERS is also believed to maintain OCD symptoms by increasing responsibility attributions (Lopatka & Rachman, 1995) and perpetuating a cycle of long-term compulsive reassurance-seeking (Salkovskis & Warwick, 1986). The current study proposes that both components may be associated with role confused attachment representations and consistent with findings in a non-clinical sample, that role-confusion may be associated with OCD symptom severity via these components (Doron et al., 2009). This was not a planned analysis for the current study as the OCD sample would be underpowered to explore these relationships. However, the data permitted a whole group analysis which appears as an additional analysis in appendix 3b. Findings offer some tentative support for the hypothesis and Doron et al. (2009) work in that the relationship between role-confusion and OC symptoms is mediated by both inflated responsibility and ERS, which are associated. In support of the argument of specificity, there is a significant indirect effect between role-confusion and OC symptoms via inflated responsibility. This pathway does not form a significant indirect effect for anxiety or depressive symptoms offering some support for the cognitive model of OCD in this adolescent sample. Results of this preliminary investigation point to the need for future research to recruit a larger sample to explore these relationships with a sample of adolescents with OCD which can be compared to adolescents with anxiety.

Multiple Regression was used to test the proposed theoretical relationship between role-confusion and inflated responsibility and ERS. According to traditional model tests for mediation there must first be a significant direct effect between the independent and dependant variable. To achieve full mediation, this association must become non-significant when tested alongside an indirect pathway which contains a significant association between the independent and mediator variables and between the mediator and dependent variables (Baron & Kenny, 1986).

### **Obsessive Compulsive Symptoms**

The direct path from role-confusion to OC symptoms was initially significant at ( $\beta = .40, p < .01$ ).

*Inflated Responsibility:* This pathway was reduced in power but remained significant when the full model was tested ( $\beta = .25, p < .05$ ) resulting in only partial mediation. Role-confusion was

significantly associated with Inflated responsibility attributions ( $\beta = .31, p < .05$ ), which was in turn significantly associated with OC symptoms ( $\beta = .49, p < .01$ ) and Sobel's  $t$  statistic indicated that this formed a significant indirect path from Role-confusion to OC symptoms ( $z = 2.19, p < .05$ ).

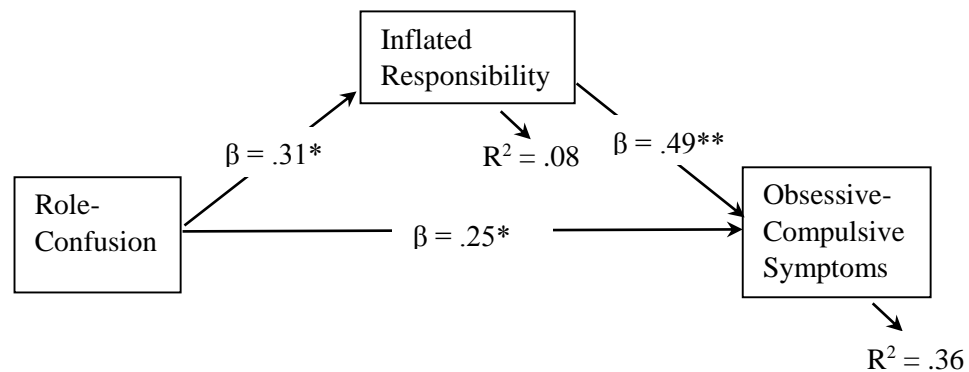


Figure 1: Analysis of mediation properties of Inflated Responsibility

*ERS*: The initial direct effect between role-confusion and OC symptoms was again reduced in power but remained just significant when the full model was tested ( $\beta = .19, p = .05$ ) resulting in only partial mediation (see Figure 2). Role-confusion was significantly associated with ERS ( $\beta = .31, p < .05$ ), which was in turn significantly associated with OC symptoms ( $\beta = .68, p < .001$ ). Sobel's  $t$  test indicated that this did not form a significant indirect path from Role-confusion to OC symptoms ( $z = 1.55, p > .10$ ). However, this model explained a considerably higher proportion of the variance in OC symptoms than the model including inflated responsibility as a mediating variable.

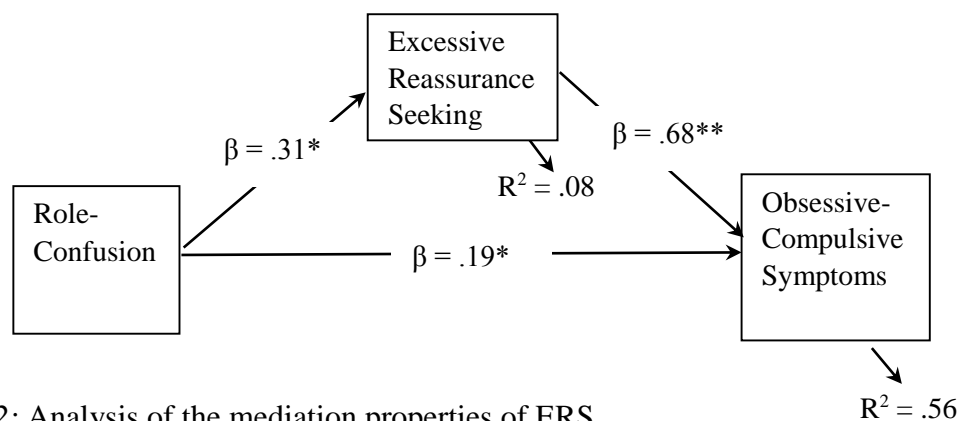


Figure 2: Analysis of the mediation properties of ERS

Figure 3 illustrates that this model achieved full mediation according to the rules of Baron and Kenny (1986) as the direct path from role-confusion to OC symptoms reduced to non-significance ( $\beta = .13, ns$ ) with analysis of the full model. Role-confusion significantly predicted Inflated Responsibility Attributions ( $\beta = .31, p < .05$ ) which, in turn, predicted OC symptoms ( $\beta = .31, p < .01$ ) and this remained a significant indirect effect within the full model ( $z = 1.98, p < .05$ ). Role-confusion also significantly predicted ERS ( $\beta = .31, p < .05$ ) which was, in turn, associated with OC symptoms ( $\beta = .58, p < .001$ ). This pathway was not a significant indirect effect from

Role-confusion to OC symptoms ( $z = 1.25, p > .10$ ). Overall this model explained 62% of the variance in OC symptoms within this sample.

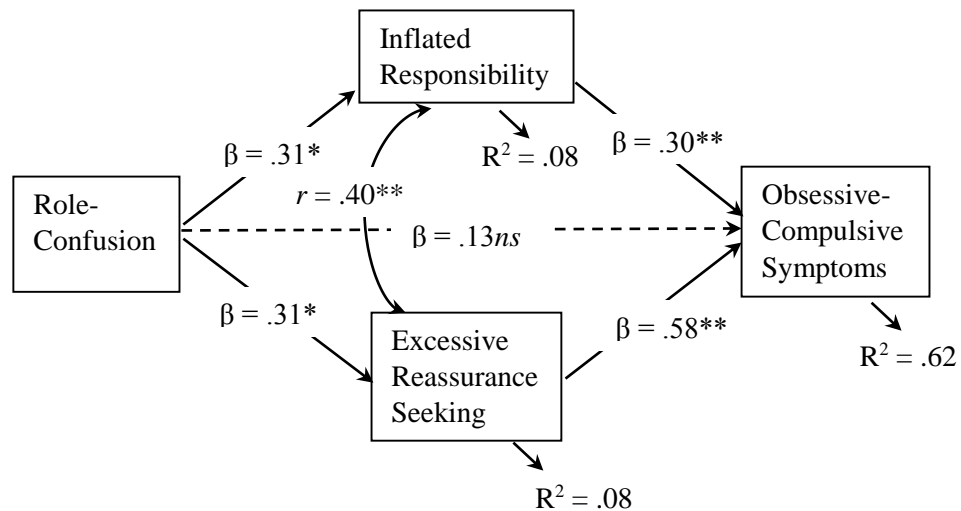


Figure 3: Full test of mediation for OC symptoms

It is of interest to note that this model seems to be driven primarily by a moderately role-confused interaction. The sample is too small to re-run these models using only those participants with the highest scores on the primary variables. However, descriptive statistics conducted on participants with the OC symptoms above the clinical cut off, or participants scoring within the top 30% of ERS and Inflated Responsibility attributions represent those classified as having moderately role-confused parenting and moderately caregiving or organising adolescent behaviours. This represents 63% of the OCD sample, 42% of the anxiety sample and 5% of the HC sample. Conversely, for participants with very high role-confused interactions, there is a negative association between role-confusion and OC symptoms ( $r = -.34$ ) and ERS ( $r = -.14$ ) and for participants with very low role-confusion, there are negative associations with OC symptoms ( $r = -.38$ ), ERS ( $r = -.34$ ) and Inflated Responsibility ( $r = -.55$ ).

### Anxiety

The direct path from role-confusion to Anxiety symptoms was initially significant at ( $\beta = .33, p < .05$ ), although less strongly related than the relationship between RC and OCD.

*Inflated Responsibility:* This pathway was reduced to non-significance ( $\beta = .20, ns$ ) resulting in full mediation. Role-confusion was significantly associated with Inflated responsibility attributions ( $\beta = .31, p < .05$ ), which was in turn significantly associated with anxiety symptoms ( $\beta = .42, p < .01$ ) but Sobel's  $t$  statistic indicated that this was not a significant indirect path from Role-confusion to anxiety symptoms ( $z = 1.98, ns$ ).

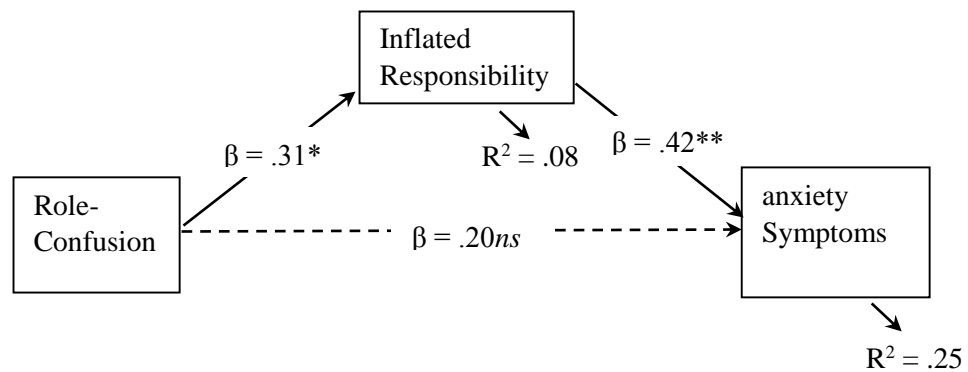


Figure 4: Analysis of mediation properties of Inflated Responsibility in relation to anxiety

*ERS*: The initial direct effect between role-confusion and anxiety symptoms was reduced to non-significance when the full model was tested ( $\beta = .14$ , *ns*) resulting in full mediation (see Figure 2). Role-confusion was significantly associated with ERS ( $\beta = .31$ ,  $p < .05$ ), which was in turn significantly associated with anxiety symptoms ( $\beta = .64$ ,  $p < .001$ ). Sobel's *t* test indicated that this formed a significant indirect path from Role-confusion to anxiety symptoms ( $z = 2.26$ ,  $p < .05$ ). However, this model explained a considerably higher proportion of the variance in OC symptoms than the model including inflated responsibility as a mediating variable.

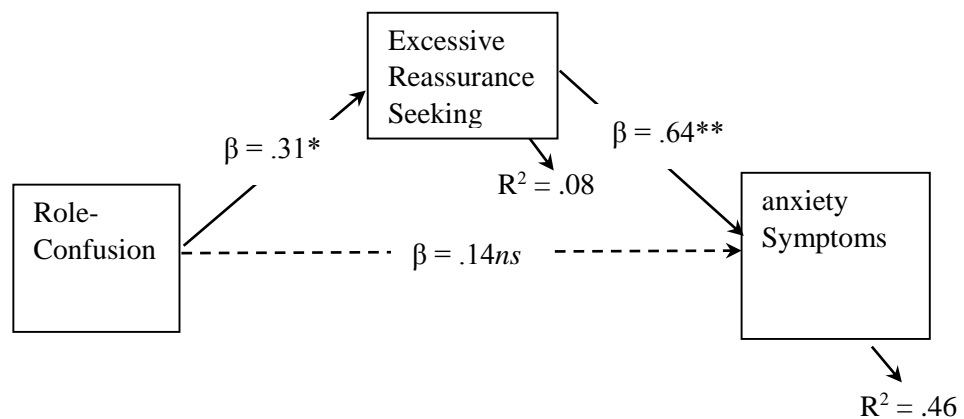


Figure 5: Analysis of the mediation properties of ERS in relation to anxiety

Figure 5 illustrates that full mediation was achieved with the direct path reduced to non-significance ( $\beta = .09$ , *ns*) with analysis of the full model. Role-confusion significantly predicted Inflated Responsibility Attributions ( $\beta = .31$ ,  $p < .05$ ) which, in turn, predicted anxiety symptoms ( $\beta = .23$ ,  $p < .05$ ) and this remained a non-significant indirect effect within the full model ( $z = 1.61$ , *ns*). Role-confusion also significantly predicted ERS ( $\beta = .31$ ,  $p < .05$ ) which was, in turn, associated with anxiety symptoms ( $\beta = .56$ ,  $p < .01$ ). This pathway formed a significant indirect effect from Role-confusion to anxiety symptoms ( $z = 2.21$ ,  $p < .05$ ) indicating that Role-confusion

predicts anxiety symptoms via increased ERS. Overall this model explained 50% of the variance in OC symptoms within this sample.

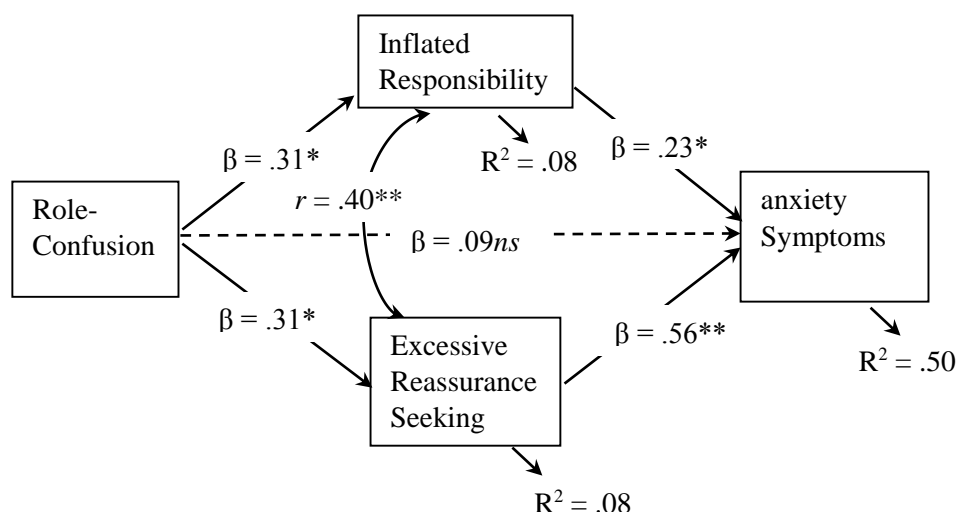


Figure 6: Full mediational model in relation to anxiety symptoms

### Depression

*Inflated Responsibility:* The initial direct effect was non-significant but according to MacKinnon, Lockwood, Hoffman & Sheets (2000) an indirect effect can be tested when the predictor variable is significantly correlated with the proposed mediator variable which is in turn significantly correlated with the outcome variable. Role-confusion was significantly associated with Inflated responsibility attributions ( $\beta = .31, p < .05$ ), which was in turn significantly associated with depression symptoms ( $\beta = .34, p < .05$ ) but Sobel's  $t$  statistic indicated that this was not a significant indirect path from Role-confusion to depression symptoms ( $z = 1.76, ns$ ).

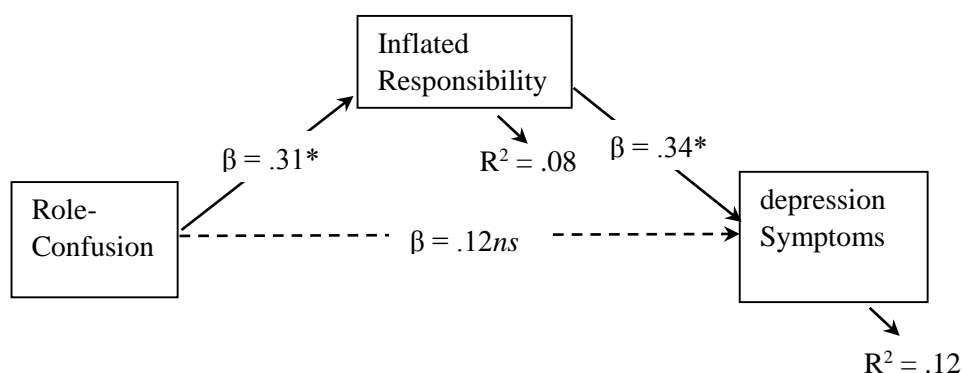


Figure 7: Analysis of mediation properties of Inflated Responsibility in relation to depression

*ERS:* The direct effect between role-confusion and depression symptoms was again non-significant when the full model was tested ( $\beta = .04, ns$ ). Role-confusion was significantly

associated with ERS ( $\beta = .31, p < .05$ ), which was in turn significantly associated with depression symptoms ( $\beta = .56, p < .001$ ). Sobel's  $t$  test indicated that this formed a significant indirect path from Role-confusion to depression symptoms ( $z = 2.21, p < .05$ ).

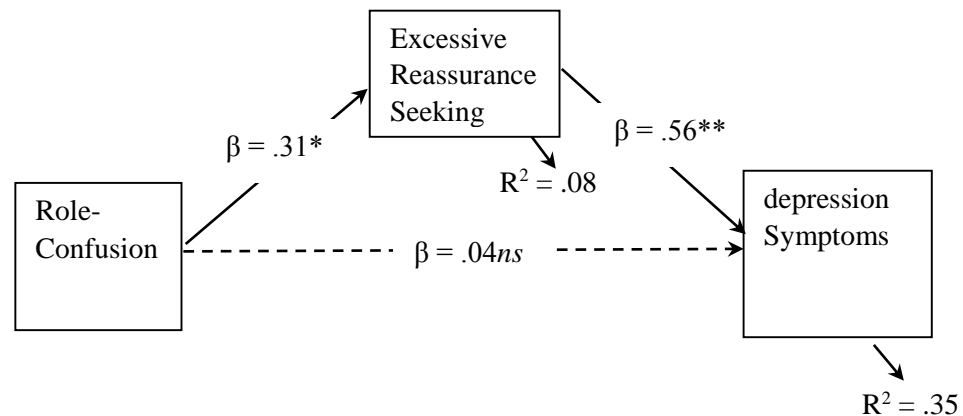
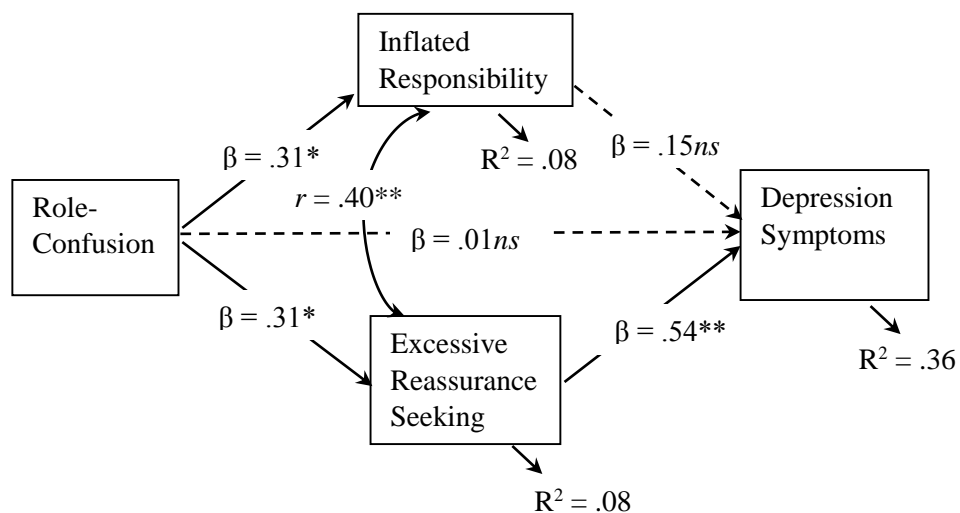


Figure 8: Analysis of the mediation properties of ERS in relation to depression

Figure 8 illustrates that role-confusion significantly predicted Inflated Responsibility Attributions ( $\beta = .31, p < .05$ ) but when analysed as part of the full model, inflated responsibility no longer predicted depression symptoms ( $\beta = .15, ns$ ). Role-confusion also significantly predicted ERS ( $\beta = .31, p < .05$ ) which was, in turn, associated with depression symptoms ( $\beta = .58, p < .001$ ). This pathway remained a significant indirect effect from Role-confusion to depression symptoms ( $z = 2.13, p < .05$ ) indicating that role-confusion has a significant indirect effect on depressive symptoms via increased ERS.



Collectively these findings suggest that ERS acts as a mediating variable in the relationship between role-confusion and emotional distress. However, it is not specific to OCD and instead the only significant path from role-confusion to OC symptoms is through inflated responsibility. This is unique to OCD as this is a non-significant pathway for anxiety and depressive symptoms which instead are significantly indirectly associated with role-confusion via heightened ERS.

## Appendix 3d: Notes for authors, Child Development

### Author Guidelines: Child Development

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